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ABSTRACT

The seminar was ninth in a series of national annual seminars conducted for vocational educators responsible for coordinating and conducting personnel development programs. Major objectives were to: (1) Increase knowledge of personnel development models and strategies used in business and industry and of selected industry-education cooperative programs for personnel development, (2) identify functional guidelines for the operation of selected industry-education cooperative programs of personnel development, (3) generate potential methods for increasing involvement of business and industry in pre-service and in-service personnel development programs, (4) increase knowledge of innovative strategies for planning instruction in personnel development programs, and (5) increase information about available research and development products for use in personnel development programs. Presentations contained in the document focus on the following themes: Industry-Education and Personnel Development: The Context; Planning Instruction and Evaluating Instructional Systems; Industry-Education-Labor Cooperation; and The Development of Human Resources. Also included are summaries of seven simultaneous programs of research and development efforts in personnel development and brief reports of seven special interest groups who met to identify strategies and techniques for providing better industry-education cooperation. Appended are the seminar program and list of participants. (Author/RG)

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Leadership Training Series No. 46

1975 National Vocational Education

Personnel Development Seminar

Industry-Education Innovations

in Personnel Development

October 28-31, 1975
Omaha, Nebraska

Compiled and Edited
by
Daniel E. Koble, Jr.
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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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foreword

The Center for Vocational Education has a history of providing in-service education, on a national basis, for those vocational educators responsible for coordinating and conducting personnel development programs. The 1975 National Vocational Education Personnel Development Seminar was held in Omaha, Nebraska, October 28-31, 1975. This was the ninth in a series of such seminars which have been conducted annually by The Center.

The theme for the 1975 seminar was "Industry-Education Innovations in Personnel Development." Six major objectives guided the development and execution of the seminar. They were: (1) to increase knowledge of personnel development models and strategies used in business and industry; (2) to increase knowledge of selected industry-education cooperative programs for personnel development; (3) to identify functional guidelines for the operation of selected industry-education cooperative programs of personnel development; (4) to generate potential methods for increasing involvement of business and industry in preservice and in-service personnel development programs; (5) to increase knowledge of innovative strategies for planning instruction in personnel development programs; and (6) to increase information about available research and development products for use in personnel development programs.

The above objectives were realized through a number of relevant presentations, panel discussions, special interest group meetings, and exhibits. All seminar activities were conducted and/or facilitated by a cadre of representatives from business, industry, education, and various other appropriate organizations and agencies.

The major seminar presentations and reports are contained within this publication. It is our hope that these documents will be of value to all vocational educators who are concerned, either directly or indirectly, with personnel development programs.

Recognition is due Daniel E. Koble, Jr., research and development specialist at The Center for directing the 1975 seminar. Appreciation is also extended to Center staff members Dallas Ator, Kay Adams, Pat Lewis and Mark Newton for their assistance in coordinating and conducting the seminar. The cooperation and assistance provided by the program planning committee and The American Society for Training and Development is also gratefully acknowledged.

Robert E. Taylor
Director
The Center for Vocational Education

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section one:

Industry-Education and Personnel Development : The Context

Industry and Education Stand Together

by John W. Thiele

It is a real pleasure being here this morning to keynote this important and timely seminar. As you all now know, I have a double barreled interest in the necessity of industry and education working together to solve problems which face all of us during the last quarter of this century. As an industrial relations executive and also as the chairman of the National Advisory Council on Vocational Education, I see the urgent and pressing need for industry and education to stand together to successfully meet these challenges.

Our country is facing a period of limited resources. The recent awareness on the part of the general population that we are facing an energy crisis, that we have to generate new sources of energy, and that new technology is being, and will continue to be, developed, has presented new considerations and concerns for all of us. We are only beginning to consider national policies in fields of nuclear, solar, geothermal and other alternative energy source fields, mass transportation, and new energy-saving techniques in autos and construction. There is no question the impact of the energy situation will have a great influence on the economy which in turn will affect every person in this room--your job, your income, in fact, the entire future for you and your family.

This is a threatening, yet exciting, new "frontier." If we don't meet these challenges of the future, the results will be economic and social, less technical development and higher unemployment, lower income and lower standard of living, lower funding for education and other social programs. We would all have to readapt to a lower and very different level of living.

We have to learn to make the best possible use of natural resources, and I think we have to learn to make the best possible use of human resources as well. We've got to train people to become as productive as possible and to utilize their talents so they can enter and remain in the economic mainstream to their fullest potential.

The education of America's adult population is one of the major challenges to our educational system today. In its broadest sense, adult education encompasses many target groups, including those enrolled in basic adult--or remedial--education, arts and crafts, and other leisure-oriented courses,

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*John W. Thiele is Director of Industrial and Community Relations, Whirlpool Corporation, Fort Smith, Arkansas. He is also Chairman of The National Advisory Council on Vocational Education.

as well as vocational, and manpower training programs. For the most part, however, adult education is related to job training and career advancement. A large group includes those on the job who are enrolled in training or management development programs.

Dr. Thurman J. White, a leading adult educator, predicted that "By 1980, 20 percent of the adult population will be committed to at least one program of part-time study. Adult education will emerge as a major concern of social scientists, and 'easier learning in less time' will be made possible by educational technology."

As we enter our nation's bicentennial, the primary focus of our educational policy may well be the education, the reeducation, and the continuing education of America's adult population. At one time, many looked upon adult education as a temporary program, necessary to make up for failures in other areas, and reserved pretty much for the poor and the ignorant. This was never wholly true and is less and less valid as a description of adult education. Adult education will take a leading role in modern educational systems. The emphasis will not be on remedial education, but on continuing and developmental education. Such training can have a significant effect upon the quality of life as well as the quality of our productive processes.

We must coordinate our education programs at all levels, so that they work in tandem, rather than at random. We must also coordinate education policy at both the federal and state level with our manpower, economic, and social policies.

Our nation's economy is undergoing severe changes, from which we will probably never recover, in the traditional and accepted sense of the term "economic recovery." These changes will have far-reaching effects on all aspects of our national life. As the concept of laissez-faire was long ago ruled invalid in economic affairs, so must we now abandon laissez-faire in education and other related aspects of our society, and adopt a comprehensive policy which recognizes the complex interrelation between education, the world of work, the economy, and social problems.

If we, as a nation, develop such a logical and coordinated policy, which would include the full realization of the career education concept and a continually increasing emphasis on adult education, then the opportunities and responsibilities of vocational educators will vastly expand.

In January, the National Advisory Council issued a paper on "The Challenge to Vocational Education in the Economic Crisis," which most of you have seen. I think that several of the recommendations the Council made then apply directly to this meeting, to the need for cooperation that we are addressing.

In a time of severe economic crisis, which we are now experiencing, we cannot continue business as usual. The disruptions experienced by industry, labor, and government are not temporary phenomena which will be corrected

when the next quarterly economic forecast is issued. Many workers who are now laid off will never return to their former occupations. Conditions will not "normalize" in the sense of a return to the former status quo. We must recognize that the present economic upheaval will seriously affect work patterns and basic industries.

Already the effects of these changes are beginning to be felt in every household in the country, and in our various institutions. Future shock is here. From now on it will not be uncommon for workers to change job skills several times in a working lifetime. Our educational system bears a special responsibility to help us absorb some of the impact.

We all need to become seriously involved in determining exactly what skills are needed in the rapidly changing job market--both now, and in the future--so that we can provide accelerated training or mini-courses that will result in employment.

We need to open the classrooms, to utilize industry on-the-job training resources and allow students to learn through an industry-education cooperative arrangement, so they are prepared for new and emerging occupations as technology advances.

We need to work together in order to coordinate programs with other agencies, such as CETA, Department of Commerce, etc., to prevent duplication and waste, wherever possible.

We need to phase out obsolete programs which are not relevant to current labor market demands.

And finally, we need to utilize our available and limited financial resources for the best possible end--the utilization of our human resources.

The United States has long been proud of its resources, and particularly the skills and productivity of its people, but today we have the highest rate of unemployment experienced since the Depression, and several other countries, including Sweden, Germany, and Japan, have passed us in productivity gains.

The largest proportion of our population is located in the smallest proportion of space, the urban centers. The National Advisory Council has been very concerned with the problems of urban vocational education. We published a report last year on the findings from our hearings in major cities, and some of the concerns we expressed are similar to the general statements I have made--the difference for urban areas is that the problems are particularly concentrated. For example, we know that in our cities we are not reaching those who need vocational education the most, because facilities are often antiquated, programs outmoded, and teachers' skills need to be updated. To add to this complex maze of problems is the growing loss of job opportunities in the cities due to outmigration of jobs.

For these reasons, we especially need the real involvement of educators, business, industry, and labor people in these urban centers.

Rural areas have as many problems, and we cannot overlook the concerns of these people, who often attend isolated schools with a minimum of vocational course offerings. Communication and transportation are barriers for many rural people who need and want vocational education and job training so that they can enter the labor market. Business and industry often depend upon the rural pools of manpower, so they have much at stake in assuring that adequate vocational education is provided in rural areas, as well as in our cities.

Vocational education has expanded considerably since the enactment of the '63 Act and the '68 Amendments. The range of course offerings has broadened to meet labor market demands, and the Comprehensive Employment and Training Act (CETA) has filled many of the gaps in social demands. Now there is consideration of further legislation for the concept of career education as an "umbrella" term, which includes both academic preparation and vocational education. But this concept, the emphasis on increasing career awareness and awareness of occupational opportunities, provides further challenge to vocational education. It is a good start toward assisting individuals to make choices that will be more satisfying. Now vocational education must provide training to match those expecations. Students--adults as well as young people--are coming to vocational education as an entry-point, to enter the world of work. While vocational education is concerned with educating the student as an individual, ultimately we are expected to provide training for jobs.

I've given you my views on the problems we face, and on the challenges before us. Now I'd like to focus on some possible solutions:

Those of us in business and industry have been saying for years--"Give us the trained people we need, and we'll hire them because we have jobs." Vocational education has been saying--"We can provide the training." But if vocational educators and businessmen only state their expectations, if they don't communicate, if they don't coordinate, we'll all be doing a disservice to each other and the students, missing the opportunity to contribute a great deal of talent toward solving the country's problems of limited resources.

One of the most important ways in which concerned individuals in business and industry may assist the educational community is through advisory committees--particularly the local crafts or trades advisory committees. We can provide input to local schools to develop and implement programs that are based upon current technology; to design pre- and in-service teacher training programs; and very often supply equipment to implement our advice. Industry can bring teachers into shops and plants in order to help them to become updated in their skills. And industry-education, through cooperative education programs, can provide the opportunity for students to gain valuable on-the-job experience that cannot be obtained in the classroom.

However, business and industry can't successfully complete this job alone. We need the active interest, participation and support of organized labor.

I would suggest to you that this mutual area of interest in education and the development of our national human resources is an excellent opportunity for industry and labor to work together. It represents a plateau of common interest work where we can work together to improve our educational delivery system.

There is a side benefit to involving business and labor in the development of educational programs--education gets the opportunity to give us the chance to see firsthand what education can produce. I'm talking about more than meetings, more than advice, more than sharing concerns. I'm talking about becoming actively involved in solutions, in programs, in working together to share our knowledge and skills.

There is a need for us all to become involved at all levels, because we have so much at stake and so much to gain. As we approach the bicentennial--200 years as a nation, our country faces serious problems and challenges. We have limited financial and natural resources. We have wasted human resources. The energy crisis, the economic reality of massive unemployment, social demands, and less-than-effective political solutions . . . all represent problems and lower standards of living--and all present challenges to each of us. So I offer you--all of the participants in this conference, those from industry and labor, as well as those from education--a challenge that is very specific. The challenge I offer is that we build upon our strengths, and our successes, and those linkages that already exist between us. Let us fully utilize the opportunity we have at this conference to <u>listen</u> to each other, as well as to talk. Be well aware that each has much to offer the other, and that, ultimately, we are all concerned with developing sound vocational education programs for the benefit of individual students and with more effectively utilizing all the resources of our great nation.

An Overview of Personnel Development in Business and Industry

by Charles C. Drawbaugh*

This assignment was conceived to provide vocational educators with an overview of the current status of personnel development in business and industry across the United States. The definition of the word "overview" would prompt one to make a few generalizations about the topic as an approach to satisfying the requirements of the assignment. However, the scope of personnel development in business and industry is that enormous and the structure so varied that one cannot readily grasp an overview of it. It, therefore, becomes a formidable task not only for one to present the overview but also for you to comprehend it.

An obvious beginning, now that the challenge has been accepted, is to declare the perspective from which the paper took shape and to specify limits and establish parameters which make the task somewhat more manageable. The perspective, or viewpoint is, of course, that of a vocational educator with experience in public school education rather than in business and industry training. Public education and industrial training are similar in many ways; a major difference is in instructional settings. The vocational education perspective, with its set of pedagogical biases, is counterbalanced in this paper with conclusions, issues, trends, and projections about corporate training discovered in the search for information.

Information and materials were gathered primarily through an intensive review of the current literature, a number of interviews with industrial trainers, and limited visits to corporate training sites and learning laboratories. A concerted effort was made to favor the use of printed materials generated in the late 1960's and early 1970's; however, those produced earlier were not disregarded if, for example, they represented landmark research or filled an information gap.

The outline developed for the paper establishes parameters within which the report was researched and written. A historical sketch of the training movement from apprenticeships to human resource development reveals the

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*Charles C. Drawbaugh is Professor of Education, Department of Vocational-Technical Education, Rutgers University, New Brunswick, New Jersey.

emergence of a vast and important part of the corporate structure. The body of the outline focuses on trainees, training, and trainers in the language of business and industry or on students, instruction and teachers in the jargon of public education. More specifically, the broadened headings of Human Resource Pool, Human Resource Development, and Organization and Management of Training provide the overview of the state of the art of personnel development in business and industry. Summary statements will be made which are assessed to have an impact on the future direction of human resource development in both business and industry and in public vocational education. Included will be those predictions on the topic ventured by futurists.

Historical Sketch

Training for work in early America was accomplished primarily through apprenticeships which were the common method of training in Medieval Europe. The apprentice was indentured to a master craftsman for a period of time to learn a trade or profession and become a journeyman or professional practitioner such as a doctor or lawyer. "Indeed," wrote Patten (1971), "apprenticeship was the method of learning before aspects or subject matter to be learned, were identified, isolated, and packaged as related instruction to be taught in group situations in a classroom."

It follows naturally that artisans and craftsmen would form guilds for the purpose of exchanging ideas and controlling common interests for their own mutual benefit. Guilds, according to Steinmetz (1967), "created private franchise and at the same time established quality standards of products through quality standards of workmanship. These yeomanry guilds became the forerunner of the modern-day labor union."

Factory schools came into being just prior to the turn of the century. The rapid growth in business and industry demanded more master craftsmen than could be produced through the individualized apprenticeship process. The term "factory school" connotes group instruction and use of the printed subject matter and course content to supplement on-the-job training. "Such companies as Western Electric, Ford, and National Cash Register were in the forefront of this educational activity." (Steinmetz, 1967)

The early 1900's were marked by federal legislation for vocational education, the beginning of industrial training associations, and a period of minimal job training by business and industry until spurred to do more as a result of the World War I crisis. Correspondence schools emerged during the era and were supported as an additional means for training employees.

Again during the Great Depression years training was neglected by business and industry since the supply of trained manpower exceeded the needs. Governmental concern relative to these conditions of the times was reflected in the establishment of the Civilian Conservation Corps and the National Youth Administration which offered meaningful work and job training for young workers and students.

The emergency created by World War II stimulated a flurry of training activity in the factory and shipyard. The mid-1940's were characterized by the "J" programs. The Job Instructor Training (JIT) program was developed to train line supervisors how to train workers. The three-day course was given to almost 2 million line supervisors who, in turn, trained some 10 million workers. Other training programs in the "J" series were Job Relations Training (JRT), Job Methods Training (JMT), and Job Safety Training (JST). Program Development Training (PDT) was designed for executives who were unfamiliar with training techniques. It was during this concentrated effort on training that the position of "training director" was to become a common position in the management hierarchy of the corporation.

The American Society of Training Directors (ASTD) was formed in 1945. Now known as the American Society for Training and Development, the professional organization for training personnel boasts some 10,000 members in numerous chapters across the country. While the society provides it membership with a multitude of services, the most obvious is that of publishing the *Training and Development Journal*. Headquarters for ASTD is in Madison, Wisconsin.

"The early 1950's was a period of intensive supervisory training. The Hawthorne Studies of 30 years earlier were rediscovered, and the supervisor was seen as the key element in the work relationship. Although some HRD (Human Resource Development) specialists still insist on identifying needs, the general practice was that every supervisor needed human relations training. The demand increased and supervisory training even became a popular offering in public evening school." (Nadler, 1970)

"The decade of the 1960's was one of rapid, dramatic, and substantive technological, social and economic change. The period also marked the coming age of training and development. Because business, industry, military, and government organizations changed rapidly, owing to advancing technology and increasing scope and complexity of operations, all types of enterprises were forced to spend money and other resources for training." (Tracey, 1974)

Tracey (1974) accumulated data from several sources which reveal the scope of human resources development by business and industry in 1971. About 85 percent of the major industries were involved. The total pool of potential trainees in private, nonagricultural, nongovernment establishments numbered 57,836,000 employees. It is not known what percentage of these employees were privileged to receive training, regardless of the type or the amount; however, the range of several estimates of the total expenditure for training and development for the year was 20 to 25 billion dollars. Private business and industry were making a sizeable investment in human resource development. "In that we are in a new era socially and economically," Carter (1975) notes that "the time appears near when industry may be spending as much money to educate its employees as the country spends to educate its youth."

"Historically, in the United States the type and amount of job training in industry has been dependent upon changes in political, economic, and societal forces. (Wenig and Wolansky, 1972) "In the past fifty years, the

industrial education function in America has evolved from an initial concentration upon the development of apprentices thrcugh the establishment of foreman training and later into executive development." (Patten, 1971) Training in business and industry continued to be called training down through the years. While still the most popular term used to explain instructional programs, the word "training" is slowly yielding to such terms as "personnel development" and "human resources development" which more adequately cover instruction in the cognitive and affective domains as well as that in the psychomotor or manipulative skills area.

The Human Resource Pool

The pool of potential trainees for business and industry takes in all employees but in reality not all in the pool are chosen to take advantage of some kind of training. While training is usually specified for selected employees as a means of fulfilling corporate goals and needs, educational programs sponsored by business and industry are also extended occasionally to serve groups of people outside of the organizational structure such as family of employees, handicapped and disadvantaged, high school and college students, and retired persons. The ranges in ages, abilities, attitudes, educational levels, and other characteristics of trainees differ from one program to another but are much more homogeneous within a designated training context. The challenge to upgrade employees and to offer educational services to others in society is ever present and increasingly more important.

The big headache in business and industry is to determine who should be selected for training and by what means. Usually large numbers of employees do not get the opportunity to move up the corporate ladder because they do not qualify for management or executive development. Testing is designed to serve the corporation and then the individual and in that order.

"Tests reduce the costs of training new employees through improved selection of only those applicants whose test scores indicate higher aptitudes for learning to perform the work. Tests help the personnel and training managers to discover unsuspected talent in employees within the organization. It is usually economically desirable that such employees be given opportunities to advance into positions of higher rank. This demonstrates the organization's policy of promoting from within the work force and tends to raise employee morale. A good testing program results in a large saving of dollars due to the reduction of employee turnover." (Youmans, 1967)

Governmental and societal pressures are on business and industry to validate tests on minorities. Equal rights enforcement agencies are scrutinizing tests validated on white male subjects which discriminate against other kinds of testees. Validation of a test on one reference group is costly; validation on several reference groups may not be worth the expense.

A second pressure on business and industry is to eliminate those selection devices validated on criteria other than job requirements. Selecting trainees on criteria other than requirements to do the job is discriminatory.

One thrust of the women's movement is to have the content of jobs redefined prior to training people to fill them. Women are asking forcefully that jobs which have been built around brawn previously now be redefined so that they will be perfectly suitable for trained women.

There is a moral commitment by business and industry to train disadvantaged and handicapped for employment. Ginsberg and Hepburn (1972) "view the disadvantaged as simply people who have not been a part of an industrial urbanized complex." Geographical location, educational level, and cultural background have a decided influence on one's orientation to the industrial world. Industry is concerned and is training and employing some disadvantaged. There exists, however, a delicate balance between appeasing society on one hand and management on the other which insists on "pay-off" from training in terms of effective human resource development, greater productivity, and high worker morale.

The skill credentials of workers available to five major industries (apparel, food, health, construction, and transit) in New York City, was reflected in findings of research done by Brecher (1972). He found that "(1) none of the industries had any real difficulty in filling the skilled jobs; (2) in general, young people who pursued a vocational curriculum in high school do not learn enough to have a significant edge in obtaining employment in these industries and surely not for preferred access to skilled jobs; and (3) on the other hand, those who pursued a vocational curriculum in community colleges, particularly if they acquire an A.A. degree and passed the certification or licensing requirement, were in a preferred position to obtain skilled jobs." The findings would lead one to deduce that particular manipulative skills are mastered readily and, more than likely, on the job. The possession of technical competence, an associate degree, and a certificate or license--a package of credentials--are in demand in the work force. Apparently at the post-secondary level of competence it is more advantageous for business and industry to recruit than to train.

Employees and young adults seeking employment have a general education which ranges in level from elementary to graduate and is rising. General education, especially at the lower levels, does not accommodate to the specific needs and beliefs of industrial systems. Industrial training builds upon the general education base, through specialized instruction which, for example, is expected to improve employment skills, reinforce industrial goals, cultivate policy image, etc. Corporations train employees for corporation benefits; employees enroll in training to improve their own positions in life.

Westley and Westley (1971) note that "the rising levels of education have produced more people who are potentially better able and more willing to participate in democratic processes, whether in the union, the factory, or nation. Fortunately or unfortunately, they conclude, this does not mean more peaceful industrial or political relations." One answer, or course, to directing employees' energies, desires, and potentials in constructive pursuits is for industry to meet employees continuing educational needs. Venn (1964) wrote that "there is little doubt that technology has created a new

relationship between man, his education, and his work in which education is placed squarely between man and his work. Although this relationship has traditionally held for some men and some work, modern technology has advanced to the point where the relationship may now be said to exist for all men and for all work."

Manufacturing begins with uniform raw materials which are put through a series of regulated processes that result in a standard product. The manufacturing model cannot be applied to human resource development at any level since employees (raw materials) differ; a variety of instructional methods and techniques (processes) are used with similar results; and the journeymen or executives (products) of the training program are not alike. Directors of training know that the manufacturing model cannot be applied to training; industrial executives are slowly learning this truth.

Human Resource Development

The definition and purpose of training in business and industry are closely related. Many definitions and purposes are set forth; most have a noticeable or inferred profit motive written into them. Wenig and Wolansky (1972) defined job training in industry "as those training techniques which are worker oriented, not management or supervision oriented, and done during the regular working hours of occupation, and for which a minimum or beginning wage is paid." Smith (1964) states that "a worker's job experiences shape his behavior. The purpose of training is to guide the shaping so that he (the worker) becomes more interested in his work, more loyal to the organization, and more productive." Blake (1973) writes that "training professionals can help to create the conditions under which negative and apathetic attitudes toward productivity can be converted into positive attitudes toward productive work." Nadler (1970) says simply that "training has as its function the improvement on the job." Patten (1971) view industrial training as the "efforts that are made to facilitate the process we call learning and which results in on-the-job behavior required of a member or members of an individual organization." He feels that education and training are regarded today more than ever as crucial types of investment for the exploitation of modern technology.

How does one distinguish among such terms as training, education, personnel development, human resource development, and organizational development? From the historical view of the literature it was evident that the terms became more encompassing to reflect the true instruction as it became more sophisticated. Originally, training meant job related learning experience for the skilled worker; today it is often used generically to refer to any industrial instruction.

The word "education" was not and is not generally used in the industrial training literature. Education involved related learning experiences such as classroom instruction, field trips, and other cognitive dimensions. It is being used somewhat in corporate education centers and in executive training programs.

Personnel and human resource development seem to imply the upgrading of the whole person including the affective domain. It is usually reserved as a term applied to managerial and executive upgrading.

Organizational management means different things to different people. Tregoe (1974) sees it as a process that (1) is deliberate and planned, (2) is sustained for a long period rather than being a one-shot dosage of medicine, (3) is aimed at improving the effectiveness of the total organization, and (4) has utilized behavioral science methodology." Wessman (1974) declares that "organizational development is typically defined by a series of assumptions or value statements about the usefulness of focusing on work groups rather than on the individual in order to improve the effectiveness of the organization."

While training is the most popular term used in referring to instruction in business and industry, it does not always provide an accurate clue to the instructional scope. Training that means instruction should be characterized by such descriptive phrases as on-the-job experience, for skilled workers, over a short duration of time, at a reasonable cost. Personnel development and human resource development are descriptive of a more comprehensive kind of instruction than training. The feeling is that the word "education" does not have much meaning in the industrial world.

It is ventured that human resource development in business and industry is supported at three rather distinct levels--worker, supervisory, and manager/executive--with proliferation by larger corporations. Specialized training, such as for sales persons, engineers, and scientists, does not fit well into the three-level classification. Small businesses are often limited to training at the worker (on-the-job) level; larger businesses may add supervisory training to its human resource development program; and corporate giants such as General Electric, International Business Machines, and American Telephone and Telegraph offer programs at all levels and for a variety of technical and professional needs on a regular schedule to fill their respective needs.

The following is an abbreviated description of a Management Training Program offered twice yearly at the Western Electric Education Center, Princeton, New Jersey. "The Management Training Program is a six-month program of general management training for a group of twelve to fourteen carefully selected second- and third-level supervisors . . . The purpose of the program is to provide, for a select group of the highest potential people, a solid base of knowledge, skill, and values on which to construct a management career which will make a significant contribution to the business . . . The training methods include reading, lecture-discussions, case discussions, role-playing and other varieties of sensitivity training, various forms of simulation training, special work projects, and skill practice with professional coaching . . . In addition to Western Electric faculty, the program draws on a great vareity of outside talent: journalists, labor relations arbitrators, government officials, foundation administrators, politicians, outside businessmen, consultant and university professors of business administration, economics, psychology, law and sociology. The full-time

program is divided into seven subject areas to form an integrated course in management. The areas are personal development, labor relations, administrative policies and practices, business and the economy, managerial controls, management science, and public affairs-community relations." (Western Electric) The rigor of the program to the trainee and the cost to the corporation are self-evident.

Management/executive training is done usually through executive development institutes such as those established by Chrysler, Westinghouse, and General Electric. In a survey of the fifty largest companies (in terms of sales as listed in the May 1971 issue of *Fortune*) representing all industries, Lundberg and Associates (1973) found that "all responding firms, 93 percent, had management training programs." Companies without their own personnel development programs meet their needs through university programs, a rising number of management education courses offered by consulting organizations, and by attracting managers and executives from other corporations.

Some prospective managers and executives pursue advanced degrees and university programs on their own or are supported by industry through sabbatical leaves and tuition. Most corporations prefer to do their own human resource development especially at the manager level in that they have the opportunity to inculcate corporate philosophy, values, and behaviors desired of their leadership. Instructional content is specific and condensed into intensive programs. Public education is less desirable since it prepares broadly; stresses societal values; and serves the asthetic, cultural, and intellectual enjoyment of individuals.

It is difficult, if not impossible, to make sweeping generalizations, without some qualifiers, in the broad and varied field of industrial personnel development. The ASTD *Training and Development Handbook* (1967), Patten's (1971) *Management Planning and the Development of Human Resources*, and Tracey's (1974) *Managing Training and Development Systems*, give 650, 737, and 480 pages respectively to the topic. To be brief and at the same time provide the overview, requires that a risk must be taken. Being aware of the conditions, general statements will be made in the areas of facilities, methods and materials, courses and programs, costs and evaluation.

Facilities. The facilities for industrial training can be characterized as being real and simulated laboratories. On-the-job training is done in a real shop under real conditions. Corporate education centers are designed for functional programs moreso than with classroom space. Learning facilities are constructed in strategic locations near universities, company plants, urban centers, and research laboratories to facilitate the use of these potential community resources. Corporate education centers, more often than not, house an extensive library and provide comfortable residential accommodations. The centers are public showplaces for the industry, and an inspiration to the trainee. They are engineered to provide an environment conducive to learning and change.

Methods and Materials. Industrial trainers use the full array of methods known to the field of education allowing specific instructional content and

conditions to dictate the specific method. Many journal articles and large portions of textbooks on training and development explain how to use a method, suggest situations for using it, and delineate strengths and weaknesses of the method. Some commonly cited methods reviewed in the literature are case method, coaching, conference, games (managerial, business), programmed instruction, role-playing, and sensitivity training. The current literature appears to favor methods which are more applicable to personnel development than to manipulative skills training. The methods support cognitive and affective more than psychomotor learning. They are geared to training at the managerial/executive level moreso than at the worker/foreman level.

Instructional materials are used extensively by industrial trainers. Conditions such as limited instructional staff and a variety of training needs often require some form of individualized training. Programmed instruction, single concept films, slide/cassette sets, and correspondence courses partly fill the needs. The content and context of the factory, office, or shipping room becomes instructional material when utilized for teaching. The aggressive corporation cannot use training aids or instructional materials which are obsolete nor can it afford to invest in those which are not tested for learning effectiveness. Training directors, it is hinted at in the literature, are often too eager to purchase innovative kinds of materials not proven for their effectiveness.

Courses and Programs. A study by Schaefer and Kaufman (1971) describes the state of the art in industrial training in the state of Massachusetts. "The training programs provided by industry were most heavily concentrated at the operative and apprenticeship level. Most operative training is quite specific and prepares the worker only for particular jobs in the individual company. It lacks transfer value. Apprenticeship training is, of course, much more general and gives the worker a skill he can apply to a variety of settings. The large industries showed a high proportion of supervisory training . . . Almost one-fourth of the firms stated that they conducted no training programs . . . By far the predominant setting for industrial training is on-the-job during working hours. Large firms are more likely to provide in-plant and out-of-plant classes, in addition to on-the-job training."

Some comprehensiveness of formal training at the supervisory and professional levels is evidenced by the Graduate Engineering and Information Systems Education *(G.E.I.S.E.) Educational Guide* (1975) published by Western Electric at Princeton, New Jersey. The guide resembles a college catalog; it contains an academic philosophy, student information, schedules, courses, enrollment procedures, and information about summer and other programs. Courses are identified by code, course title and description, course objectives written in behavioral terms, major topics to be studied, prerequisites required to enroll in the course, and the number of hours to complete the course. Corporate education centers offer formal programs and courses commensurate with higher education offerings.

Barton-Bobenin and Hodgetts (1975) surveyed 822 firms in the state of Kansas to obtain views and philosophy on management training programs offered by consultants outside of the firms. Factors which influenced a firm's selection of a management training program were "subject matter" followed by "qualifications of those sponsoring the program." Surprisingly, the factor given lowest importance was that of "cost of the program." They concluded that: "(1) firms are looking for programs which will provide ideas and concepts that the participants can take back to the job with them and apply, and (2) although the number of management training programs will increase drastically during the next decade, so will careful scrutinization of such programs."

Salinger (1975) studied disincentives to effective employee training and development. Disincentives revealed by the study in the area of courses and programs were that: "(1) behavioral objectives of training are often imprecise, (2) training programs external to the employing unit sometimes teach techniques and methods contrary to practices to the participants organization, and (3) timely information about programs external to an organization is often difficult to obtain."

Transcultural and/or cross-cultural training is becoming increasingly necessary as multicorporations are transacting more business internationally and mobility of their executives stretches across the world. Ackerman (1974), Director of Transcultural Training, Language House of Chicago, explains what transcultural training tries to do and why. She states that "transfer abroad is often as much an exercise in diplomacy as it is a business promotion. That's why training in the culture and mores of the receiving country is needed by the transferee . . . and members of the family as well. Transcultural training works to change basic attitudes, teach skills, and build a positive mental set toward the transfer."

Harris and Harris (1972) justify cross-cultural training for employees with national as well as international positions. "Cross-cultural training should increase employee effectiveness when serving outside one's own country or when working within minority groups within the United States. It should contribute to improved customer relations, sales and good will. Hopefully, it will reduce waste, misunderstanding, and confusion in international business negotiations. At least, it will help foreign business to meet foreign competition with more sophistication. Such learning will also enable the employee to understand himself and his organization better. It may not only contribute to the process of acculturation abroad, but reduce the impact of 'future shock' as the emerging cyberculture replaces traditional society and its reference points. Certainly, cross-cultural education for today's personnel will prepare employees more realistically for the pluralistic one-world of tomorrow!"

Business and industry are or have been involved in such non-employee training as consumer training (franchise and brokerage house), cooperative education (all levels of secondary and post-secondary students), manpower pool training (minorities), and contract training for the government (Job

Corps and MDTA), and public school systems (performance contracting). It is speculated that reasons for getting involved in the several kinds of non-employee training ranged from a feeling of altruism through the cultivation of future potential employees, the profit motive, and experimental testing of innovative educational concepts. The point is that industrial training and development has exhibited pedagogical expertise outside its own domicile and, in essence, began to compete with public education in the development of human resources.

Cooperative education has created a good, strong relationship between industry and education. "Cooperative education is educationally sound to the extent that when it is properly administered it allows the theory of the classroom to be complemented by practical experience." (Patten, 1971) Industry's part of the cooperative effort is to provide the student (co-op, intern, extern, etc.) with practical experience.

Knowles and Associates (1972) cite two principal reasons business and industry support cooperative education. "First, they have jobs to be done. They find cooperative students able and enthusiastic workers and eager to learn. Second, cooperative education is and has been long recognized by employers as a useful device for the recruitment of permanent personnel." Knowles points out that "studies of employment records consistently show that employees who worked for an employer as cooperative students typically remain longer and are better employees than those who had no prior connection with the company. With the national spotlight now focused on off-campus experience as a way toward relevance in education, the future of cooperative education appears brighter than ever"--barring a prolonged sluggish economy.

Costs. The costs of training and development are not readily available to the public and may not really be known within the business itself. Complex methods of accounting, which vary from one business to another, may or may not charge training costs to another department, allow for trainee expenses and wages, offset training costs with trainee production, etc.

Some broad generalizations have been uncovered in the search for information about the costs of training. Schaefer and Kaufman (1971), found that "the large firms tend to spend larger amounts on training . . . About half of the firms either did not wish or could not provide cost estimates."

Brecher (1972) found in his study "that the costs of upgrading tend to be ignored or minimized." The most successful effort in his study - "the upgrading of nurses aides to Licensed Practical Nurses - involved an expenditure in excess of $6,000 per person."

Barton-Dobenin and Hodgetts (1975) reviewed the costs of seminars as upgrading devices. They report that the "American Management Association grosses well over $10 million annually from its approximately 1600 seminars. Major universities account for another large percentage of the management training programs currently in existence. When the entire picture is brought into focus, there are approximately 18,000 trade associations and consultants and more than 2,000 private and public educational institutions in the United States conducting business seminars."

Ginsberg's foreword in the Breecher (1972) report discusses costs of training. He writes: "Training carries a cost. Employers are therefore careful to train only as many workers as they have openings. Moreover, they are careful to provide only enough training so that the worker can handle his new assignment effectively. To provide more would increase the probability that the worker will look around for a new job which would make use of his broadened competence and would pay more."

Boynton (1967) summarizes the economics of training in two sentences: "The emphasis placed on training costs versus results will vary considerably, depending upon management's requirements. Some organizations will feel that the results justify any expense; others will run their training department with great caution."

Evaluation. Training directors are concerned about evaluation as a means of selling the training budget for the next fiscal year. Kirkpatrick (1967) writes that "the objectives of most training programs can be slated in terms of results such as: reduced turnover; reduced costs; improved efficiency; reduction in grievances; increase in quality and quantity of production; or improved morale which, it is hoped, will lead to some of the previously stated results. From an evaluation standpoint, it would be best to evaluate training programs directly in terms of results desired. There are, however, so many complicating factors that it is extremenly difficult, if not impossible, to evaluate certain kinds of programs in terms of results. Therefore, it is recommended that training directors evaluate in terms of reaction, learning, and behavior."

McBeath (1974) writes that "training in general is difficult to assess statistically (above apprentice-type training where success may be quantified). Management training requires largely subjective assessment. The effectiveness of training in improving employee relationships generally, establishing effective practices and workable grievance procedures, can be judged by the frequency of problems referred back to department or other top management."

It would seem natural that top level management of profit-making firms would seek an evaluation of its training based on benefit-cost analysis and the assessment of measurable training objectives. Fauley (1975) acknowledges "that not all training programs lend themselves to the clean development of a cost model. If the behavior change resulting from your training program cannot be related in any way to dollars earned, any attempt to develop a cost model will be unsuccessful."

Lundberg, Dunbar, and Bayless (1973), referred to earlier, revealed that "no responding company they surveyed believed its program was ineffective, and only two out of 23 firms were uncertain about their program effectiveness, but many are not confident of the reliability of the measures used. While management training was judged to be largely effective, the reasons were not altogether clear."

Tracey (1974) prefers the term "control" in checking progress toward objectives to insure that timely action is taken to achieve objectives. "Control is the means of insuring that events, activities, progress, and

results match plans. Effective control keeps plans and performance congruent. Adequate control is achieved by establishing measurable standards, comparing performance with the standards, identifying deviations and shortfalls, and applying corrective strategies to force performance to conform with plans."

Organization and Management of Training

Not all the firms in the United States train their employees. Small firms are inclined not to train. Those that do may adopt a formalized program or rely on outside sources to meet their training needs. The large corporations are heavily committed to formalized human resource development. Factors other than the size of industry, listed by Reith, (1967) which influence organization of a training program are type of industry, laws, company objectives and policies, nature of the labor market, customer requirements and acceleration of technology.

"Organizing involves identifying the functions and activities that must be conducted, grouping of those activities, and assigning each group to a leader with authority to manage." (Tracey, 1974) A one-man training program would consist of a training director with the major responsibility of coordinating training done on-the-job and under contract by outside sources. A five-man training organization may include such functions as skills and technical training, contract training, supervisor training, and training support services.

The organizational charts of large training programs and corporate education centers reveal expansion is a result of adding more functions and/or breaking down training functions into more discrete elements. Additional functions more likely to be found on the organizational charts of large training programs include management/executive training, professional and technical training, evaluation and research, non-employee training, trainee service, etc. The function of training and development in a large training organization, for example, can be sub-divided into such discrete areas as skills training, supervisory training, management training, technical and professional training, sales and dealer training, safety training, contract training, and orientation training with a person or team of persons responsible for each area. Support services of a large training organization could be sub-divided into such areas as instructor training, training aids and media, educational reimbursement, scheduling, training publications, budgets and records, residential services, etc. Large training organizations and corporate education centers are nearly or totally independent with a hundred or more professional staff people who train several thousands of employees annually.

The staffing of formalized training programs is based on many variable factors. Daly (1967) reviews the expanse of business and industry within which a training director performs. "Training occurs in all types of industrial, business, and governmental organizations. Training occurs in big and small companies; in one location and in multi-location organizations. There are one-man training departments; there are training departments having

50 or more professional staff people. Some training staffs report locally to the line organizations, while others report to a higher staff level. In some instances, two training staffs at one location may report to different executives. Some training staffs act primarily as a consulting or coaching service to the line organization. In other organizations, the emphasis is on highly formal classroom activities within, or even outside, the organization. Training content ranges from basic company orientation all the way through the equivalent of university graduate-level courses. Employees trained ranged from unskilled laborers through top scientists and company presidents. The nature of training is wide and includes apprentice training, sales training, customer training, engineering education, foremen training, office training, management and executive development. Personal qualifications to man the training function vary widely on education and experience. In some situations, the training staff man acts primarily as an instructor, while in others he performs largely a coordination or administrative function."

The administrative head of an industrial training program generally holds the title of Training Director or Manager, Personnel Development. Of the 134 members listed in the 1975 Director of the Central Ohio Chapter of ASTD, 56 used training and 20 used development in their respective titles. Other titles of directors and trainers reflect rank or position within the firm or training program, the kind and level of training being done, and past or present relationships with public education. Whitlock's (1967) studies found that "60 percent of the college majors of training directors he surveyed had majors in business administration, psychology, or education with the remaining 40 percent scattered over the college curriculums; and the training directors had no formal college training for the position but got it the hard way."

In a study of 238 ASTD members, Gossage (1968) produced a multi-statement profile of the training director. Those statements of specific interest to educators are as follows: "(1) he has had on-the-job experience in training and development prior to assuming duties as a training director; (2) he was employed for his first position on the basis of his formal education and his previous experience in training and education; (3) he believes his teaching experience is the single most valuable of all his previous work experience; (4) he has a bachelor's degree with a major in business administration or economics. One-third of the directors have a master's degree and it is probably in education or business; and (5) the chances are two to one that he has never held a state-authorized education credential." Gossage's main conclusion is that "industrial training directors are required to perform educational duties for which they have not received appropriate, organized instruction."

In-service education for trainers takes many forms. "Experience has shown that subject area specialists can be taught to teach in a relatively short period of time, whereas it is obvious that a man with a B.A. in education cannot quickly be provided with the four to six years of formal engineering education which he will require to teach advanced engineering subjects in industry." Reith (1967) Approaches used are company courses, conference leadership, college courses, seminars, personal coaching, workshops, and professional membership in ASTD.

The professional organization is stimulating continuing education and upgrading of its trainer membership. "For the first time, ASTD awarded continuing education units (CEU) to the membership who attended the 1975 National Conference. Simply stated, a CEU is a method of giving recognition for participation at conferences, seminars, workshops, etc. Based on 10 hours of attendance for one unit, the continuing education unit is a measure to demonstrate to an employer an individual's continuing education effort at his or her chosen profession."

The *Training and Development Journal*, published by ASTD, reflects the state of the art in industrial training. It is an important resource for the in-service trainer of employees. A superficial review of Volume 27, 1973 revealed that articles on a wealth of topics were contributed by authors from education, industry, the military, government and consultant agencies. Articles written by authors from education and industry equally dominated the Volume. Of the authors designated as educators, half were associated with business management and administration with the remainder representative of many other college disciplines. One article was written by a vocational educator; about one in eight authors was a woman. The industrial training system is dependent upon the educators and scientists in the colleges and universities to delve into the unexplored and report findings to the profession through its professional journal.

Conclusions, Predictions, and Recommendations

The following fifteen conclusions, with no intended value judgments, are drawn about industrial training:

- Industrial training is so massive and varied that each generalization made about it has its exceptions.
- Industrial trainers operate almost wholly in a world separate from that of vocational education yet both worlds are similar.
- Industrial training is a private and somewhat guarded function. It is not really coordinated, standardized, or communicated among firms.
- The overall purpose of industrial training is to serve the firm or business by upgrading its human resources.
- Industry intentionally discriminates in the selection of trainees; it is careful not to overtrain them for the positions they are being prepared to hold.
- Industrial training is continuing education provided adult employees with some level of general education and an experiential base.
- Industrial training tends to be rather concrete, relevant, and purposeful. It is usually based on job analysis and guided by behavioral objectives.
- Industrial training in this century has grown from apprenticeships to multilevel human resources development programs. Its instructional capabilities have been recognized especially in the past decade by the federal government as a resource for helping train minorities and the unemployed.
- Transcultural and/or cross-cultural training is becoming increasingly necessary as multicorporations are transacting more business internationally and mobility of their skilled workers, managers, and executives stretches across the world.
- Business and industry are becoming more involved in non-employee training for reasons which range from a feeling of altruism through the profit motive to educational experimentation.

- Employers of cooperative students enthusiastically endorse the cooperative approach. Cooperative edu:ation has created a good strong relationship between industry and public education.

- Industrial training directors generally are from business management, business administration, or psychology who have had no college training for the positions they hold. Trainers are often technological specialists taught to teach in a short period of time.

- Industrial training journals and textbooks are contributed to more heavily by college faculty than any other group.

- Testing and evaluation are not strong areas within industrial training programs. Governmental and societal pressures are on industrial training to eliminate those selection devices validated on criteria other than job requirements and to validate its tests on minorities. Management is demanding more careful accountability from its training programs.

- It is not technology nor capital, but rather an adequate supply of competent employees that is the decisive factor of production and marketing in the established corporation. This realization has prompted business and industry to foster a closer relationship with educators and researchers in the educational institutions.

Predictions tend to prompt one to prepare to meet the conditions and/or circumstances forecasted. It is hoped the following nine predictions serve that purpose. They are as follows:

- "There appears to be no diminishment of industry's enthusiasm for training programs. Rather, all signs indicate that the future will see more of them than did the past." (Barton-Dobhein and Hodgetts, 1975)

- "There will be a need for a more effective interface among government, education, and industry. Interchanging personnel among these organizational systems will increase as problems intensify." (Lippitt, 1975)

- Job restructuring and worker participation in decision making will be used increasingly to cut down alienation and humanize technology. Education should be in the forefront in facilitating this change. (Idea from Taylor, 1974)

- "The executive shortage which has been experienced around the world will probably be with us in the next decade or more. The rise of the international business orientation prevalent among firms in leading countries throughout the world indicates that there will be an increased need for a new type of executive development, namely, that of manager competent to function in the multinational corporation and organization." (Patten, 1971)

- "A great deal of discussion has taken place about the role of liberal education in the development of executive talent for business. There is a growing movement in the direction of liberal education for executives." (Goldwin and Nelson, 1960)

- "Finally the industrial system must rely on the state for trained and educated manpower, now the decisive factor of production." (Galbraith, 1971)

- "We can see the integration of manpower planning, training programs and opportunities for learning in industry with the evolving and virtually all-encompassing legislative force in American society. The classroom and the factory are more than ever interconnected, and the same is true for the office and for the professional occupations." (Patten, 1971)

- "Industry is likely to become more international in character and to diversify its markets. It will have to be sensitive to societal values and assume more responsibility for its employees." (Tracey, 1974)

- "With the national spotlight now strongly focused on off-campus experience as a way toward relevance in education, the future of cooperative education appears brighter than ever." (Knowles and Associates, 1972)

Burt (1967) aptly wrote, "What is needed, more than ever before in the history of vocational education, is dynamic, constructive action to add new dimension and scope to its programs. It can achieve this goal to the extent it succeeds in making industrial participation, involvement, and identification with the schools a vital part of the total occupational education system of our nation."

The following action-oriented recommendations offer ways and means to strengthen the business-industry-education relationship in your state. It is recommended that you--

- Survey the scale and scope of your adult vocational training with the intent of offering more breadth and depth. In some areas there is a shortage of part-time (later afternoon, evening, and Saturday) training opportunities under public auspices for workers who seek to add to their skills.

- Make known to business and industry your expertise in the behavioral sciences and indicate your willingness to consult. Industrial management, for example, needs blueprints on how to more democratically release human potential to achieve high production.

- Look outside of education, to business and industry for direction in improving your curriculum otherwise obsolescence and stagnation may prevail. Base the curriculum on job analysis and move toward the use of behavioral objectives for instruction and evaluation.

- Expand your cooperative education programs to include more students in the school and more businesses in the community. This approach to teaching and learning is ideal for all parties. It must be nurtured to its full potential.

- Provide your students not only with technological skills but also, and perhaps more importantly, with human relations skills. Industry can overcome the technological skills deficiencies of its employees; modifying behaviors, values, and attitudes presents more difficulty.

- Become intimately familiar with human resource needs data in your state (use the employment service, contact employers, and refer to the literature). Then add and revise training programs to meet projected employment needs.

- Initiate an exchange program between your vocational education and industrial training staffs. Exchange visiting interns, externs, and trainers for visiting industrial professors, managers, and administrators.

- Encourage industrial training directors in your area or state to utilize the services of your educational institutions by having employees enroll in the courses which will assist them in their employment. This requires that the training director be fully informed about appropriate courses, costs, and admissions procedures. Hold the classes after working hours.

- Assist your state and local advisory committees on vocational education in terms of industrial representation and effectiveness in promoting training programs which produce graduates who are in demand by business and industry.

- Recognize that the employee-initiated, employee-directed process of skill acquisition is perhaps the most important of all mobility routes in business and industry. Enrich your courses and meet the needs of employed workers by generating a plan to recruit a percentage of this potential into your programs.

- Explore funding sources outside of education for support to train the unemployed and minorities, and to upgrade employed workers. The Department of Labor, revenue sharing agencies, business and industry, labor organizations, and others entertain proposals for fellowships, scholarships, and costs of training programs.

- Get actively involved with trainers and training directors of business and industry, government, and the military. Give more attention to relationships which emanate from memberships and participation in the professional training associations and meetings of business and industry.

Human resource development is complex and it is costly; it must not be done in an irresponsible way. By establishing formal or informal alliances of business and industry, education, and government at local, state and national levels, the well-being of our American society should be enhanced immeasurably. A carefully coordinated effort coupled with a comprehensive master plan will improve the articulation of training programs which can assure with a minimum of duplication and waste an ample supply of well trained workers. Hopefully, some vocational educators will be motivated to initiate some of the preceding recommendations and/or this proposed plan of action in their respective states.

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Labor Looks at Vocational Education

by Kenneth R. Edwards*

Current opinion indicates that the American education system is failing. Much of this opinion is formed without even a nebulous perception as to what might be the underlying cause. Even the educator fails to properly address the situation. Rarely is an inquiry made to establish which educational system has failed--that of the structured classroom or that established outside the classroom? Whose educational system has failed--public, private, or that which may be attributed to the church, home, street, or workplace? Where has the educational system failed--in values, literacy, motivation, productivity, or job placement? Under what conditions has the system failed and why did the system fail?

Rationale and Trends

Comparing the two years, 1959 and 1971, in terms of school years completed by adults,[1] would lead us to the belief that the school system has not failed, but rather has achieved some degree of success. The number of adults with less than five years of education has dropped from 11.1% to 5.0% of the population while persons with four or more years of high school, has increased from 34.3% to 56.4% of the population. Although these statistics are interesting, they do not indicate the degree of proficiency or the quality of education. Is the degree of educational attainment measured only by numbers, or may this also be correlated with the educational achievement of the two groups?

At this point one should pause and endeavor to define achievement. Is the ability to achieve based on the ability to take a test? Is it the ability to gain job placement, or is it the ability to succeed in life?

To many, achievement is marked by credentials--high school diplomas, trade school certificates and baccalaureate and graduate degrees, which when related to work performance, many times, fall short of their expectations. In fact, they may produce the opposite effect to that desired.

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Studies of individuals with less formal education tend to indicate that they are more loyal and more productive than persons with higher formal educational achivements.[1] Further, recent insurance company research indicates that as adults, those with less formal education are better drivers as they have more awareness to what they are doing, and to external conditions.

Analyzed data prepared by the U.S. Department of Labor and Commerce, dealing with the growth of the Gross National Product and the manpower needed to produce it, indicate that the economy itself is not changing rapidly enough to absorb into the work force the increase of individuals with higher education. This is further enhanced by manpower reports suggesting that 80-85% of the present employment opportunities could be filled by persons possessing only high school educations. However, to most corporate personnel managers and recruiters, the importance of accumulating diplomas is greater today than ever before. In their words, "it tends to give to those that have such a running start." Running start or not, the accumulation of advanced degrees has not only eroded many placement opportunities, but has changed many employment conditions. Salary ratios between senior and beginning employees in many industries have fallen, as have the starting salary differentials between adults with college degrees and adults with only high school diplomas. From 1969 to 1973, this differential decreased to 13%, and it is forecasted to drop another 10% before the end of this decade.[3]

Granting employment on the basis of numbers of advanced degrees during a time when the economy is depressed has not only had an adverse effect on job security and layoffs, but also reemployment opportunities for those with advanced degrees.

One might wonder what diploma grabbing has to do with vocational education. To attempt to answer this we must accept two assumptions: that all education is vocational, as it prepares a person to achieve, and that labor is a commodity.

To utilize or discard a certain commodity is based on two factors: need and affordability. Although affordability is quite easy to visualize, need is not as it is based ultimately on personal judgment and status criteria becomes an issue. Also, like any other commodity, it follows the same path as other consumer products. When it is in short supply, we take what we can get, and often in greater quantities than we need. However, when it is in abundance, we become very selective, so selective in fact, that we tend to buy more assumed quality than we need. Thus, in terms of employment, when the selection ratio of new applicants to job openings becomes imbalanced, it triggers demands for traditional status criteria. Although not justifiable in terms of job performance, it tends to eliminate a vast number of applicants without advanced educations.

When status criteria is triggered, as it is now and will be for the next several years, barring a major war or natural catastrophy, the success of those in vocational education dims unless success is achieved in placement and utilization, the product is repackaged and heavily advertised to create demand, or selection based on a status criteria is declared discriminatory.

Shortcomings and Errors

In summarizing various reports,[4] it appears that vocational education, especially at the secondary level, has had a dismal performance level. Further, by certain evaluations, it would appear that it is a very expensive form of education with little reward.[5]

However, in many instances, the critics have somehow failed to see the opposite side of the coin. A certain amount of credit must be given vocational education for distracting students away from certain occupations, whether it is intentional on the part of the instructor imparting to the student the actual job entrance requirements, or unintentional by the student discovering his own limitations or satisfactions through self-evaluation or experimentation, makes no difference because it is an unrecorded benefit to industry in general.

One of the justifiable shortcomings of the present vocational education system is its own system of accounting. There is a dire need to establish some form of meaningful traceability within each of its institutions which will not only show the monetary worth, but also the social worth of each vocational education program. The accounting should also include the contributions to the program of the student and vocational student organizations. Today, many success stories of former vocational students may be contributed to the student organizations, and not the curriculum as one might expect. Student organization membership, in many instances, serves as a key to opening employers' doors. An excellent example is the strong tie formed between General Motors Service Dealers and the Vocational Clubs of America (VICA), to which automotive students belong.

Today, even with an unemployment rate of 8.4%, American industry is seeking highly paid cooperate executives, engineers, medical technicians, precision welders, salespersons, and skilled workers. However, vocational schools and their courses are not designed to meet many of these demands. In the case of the skilled worker, vocational education has always been inept.[6] It has attempted to train for a single job, and not for an occupation in an industry, like the construction industry. Vocational training at the secondary level, and some post-secondary levels, tend to focus on certain traditional trades: carpentry, bricklaying, residential electricity, etc., each being an element of an industry, but not the industry itself. It is true that some employment opportunities may be achieved through this type of training; however, in most instances the opportunities are of short range, and the student is left to join the unemployment rolls as a semi-skilled laborer. Vocational education would make a greater contribution by teaching the fundamentals of the industry: tools, materials, print reading, use of catalogues, and specifications. Two of the biggest contributions that vocational education could make to the construction industry would be, to equip students with a solid background in blueprint reading for all types of construction, and to teach enough welding so that each student can "tack and cut."

The narrow outlook of vocational education has lead to other errors in: relating the needs of one or two employers to those of the whole community resulting from a lack of communication with the community, state, regional and national bodies as to their concerns; attempting to fit traditional occupation skills into new occupations; directing less able and poorly motivated students into vocational education on the grounds that their educational needs cannot be met in any other way; allowing those in general education to refer to vocational education as the home of the misguided student and underachiever; allowing vocational education to become a dumping ground for has-been teachers who lack job experience, in the fields they are teaching; failing to provide as much mastery over mental skills as the student is capable of acquiring; failing to motivate students toward the dignity of work; failing to impart the realities of earning a living to the student; teaching occupations which have no known market; failing to seek the opinions and assistance of both labor and management; failing to communicate with or heed the opinions of community-based organizations, manpower agencies, and local governments; failing to equip students with entrepreneurial skills; failing to provide the student with meaningful knowledge as to changing job requirements; work place requirements, consumer information, the need for conservation, and the acquisition of self-taught skills.

Although many personnel managers and labor officials will state that the vocational education program falls short because it lacks general education courses necessary for students to obtain employment,[7] most will confess that they are simply protecting their investment. What they need, however, are people who have three abilities and one desire: the ability to communicate; the ability to reason; the ability to work with others; and the desire to work.

It must be noted that manual skills are not mentioned, but they play an extremely important part in the general scheme of all education. Every youth should learn to type as it is almost a general requirement in today's society. Even Congressmen, selecting young lawyers to be aids, will look for typing abilities. Those with the capabilities of going into the professional world should be equipped with notehand and other forms of shorthand.

Many skills usually found only in craft and mechanical curriculums, are not justified as the basis of employment, but rather as the basis of survival in life. These include: auto and home maintenance, home making, and consumer education from agriculture to trade and industry discipline.

It might be interesting to note that according to 1974 statistics, almost one million children under 18 years of age are living with their father as the only parent,[8] that in one out of six households,[9] a woman is the sole supporter of the family, and that although there are five million unskilled jobs, a great portion of these are filled by imported labor. Dropouts, general curriculum graduates, and those who depart college before receiving a degree, each year total 2.5 million young people. This number, combined with the number of imported laborers, will completely fill the unskilled labor market for the rest of the century.

Changing Life-Styles and Growth

Other life-style patterns also deserve observation, especially by those planning and financing vocational education courses and curriculums.

Forty-two percent of those eligible for the work force are minorities. Some must be trained for advancement so they may improve their social and economic status. Others must be brought into the work force. There are further obligations when the work force is expanded in accordance to Okun's Law. However, in many vocational and educational classes, especially those in the higher mechanical and technical disciplines, there are no minorities. Thus, employers cannot fulfill their commitments to equal employment. In fact, if vocational education would commit itself to train minorities and females according to the ratio published for standard metropolitan areas, a vast number of doors would be open to graduates, especially at the secondary level.

It is not difficult to understand that shortages of energy, natural resources, and capital will not only produce drastic changes in our life-style, but also in our technology. Each of these changes will necessitate almost overnight changes in vocational and technical education since our life-style is closely integrated with the affluent use of these three items.

We are using energy at a dramatically increasing rate. In the past 50 years, the amount of coal used is equal to the total amount used previously. In the last 20 years, we have used as much gas as was used previously. In the last decade, we have used as much electricity as was used since the utilization of electricity, and the world-wide use of energy has just begun.

The same comparisons may be made of other natural resources--wood, metals, and water. At the midpoint of this centry, America outranked all other countries in its abundance of natural resources. However, in less than 25 years, many of these resources have been consumed. Today, in the world market place, the USA may only be looked to for food and coal.

Capital has been expanded to the breaking point. A great deal of capital has been misused and is continuing to be misused. By 1967, inflation had devalued the dollar to such a degree that a new base year was established. This could happen again.

Our present society is based in many needs--the availability of jobs, energy, resources, and capital. Much of our present day vocational education is based on the same requirements.

Future use of energy, resources, and capital will necessitate the development of new job skills. There is already evidence of this in several industries. The innovations will not only create new jobs and bring about changes in the labor markets, but will also bring about changes in old jobs. This will call for the reeducation of most of our work force which should serve as a challenge to those in vocational education.

No accurate predictions can be made as to the impact future changes will have on vocational education. However, it does not take a crystal ball to visualize the impact of other items, such as: metric conversion, urban-rural renewal, leisure and recreation, transportation systems, some form of prepaid health care, and military endeavors in vocational education.

It is quite interesting to note that although many of these changes are now underway, vocational education has not moved to accept this challenge. In referring to "The Job Ahead, Manpower Policies in the South,"[10] it may be noted that while the South has had more socioeconomic change than any other region, it has remained profoundly poor. This fostered, in recent years, a steady growth in manufacturing; however, even with some federal assistance, vocational education programs have not been updated to comply with the changing requirements of the job market, thus, causing employers to import skills and to seek CETA funds to update present labor force skills. It may be further noted that even today, more vocational education students are enrolled in consumer and homemaking education courses than in any other curriculum.

Another comparison can be made in the field of energy resources which will be found and developed in rural America. Some rural areas do not support even a one-room school house. Yet, these same areas will require skilled manpower for construction, operation, and maintenance. An excellent example is the skilled construction work force that will be required to build a gasification plant at Mexican Hat, Utah--8,000 craftsmen.

Although there will be growth and changes in many industries, certain industries will be on the decline. It is quite interesting to review the forecasts issued by the Bureau of Labor Statistics.[11] This should be regarded as one of the most important tools in educational planning. Although it may not forecast the numbers as accurately as some would like, it has done an excellent job of forecasting trends and areas where labor surplus will occur. If those that operate the factory[12] had been using guidelines, they would have seen, in 1963, that there would be a surplus of electronic engineers and technicians in 1967-68. As early as 1968, they would have seen that there would be a surplus of teachers in the mid-seventies. Their current forecasts from now until the mid-80's, show a marked shift toward white collar occupations. Especially good growth areas which are forecasted are clerical, professional, and technical workers. The least growth is forecasted for blue collar workers, while farm workers' negative growth pattern will continue at an increasing rate.

It has been apparent to the labor movement for quite some time that those making projections of job openings, do not use such tools.[13] In fact, we often question the tools they use.

For example, although all forecasts indicate a decline in agriculture labor, North Carolina is still training 3,000 students in agriculture. The state of Illinois' vocational education office projected labor demands of approximately 1.4 million vocationally trained in 1973. In doing so, the projection assumed that nearly one-third of the entire Illinois work force would need immediate replacement when the truth of the matter was that only 6% was realistic.

It is true that certain measures taken by the federal and local governments will not fulfill some predictions. However, it must be remembered that most of the jobs created by government are artificial and have been created for a short period of time in an attempt to create a counter-cyclical flow of income in our economy. In short, these jobs must be regarded as an income-maintenance program rather than expansion in our work force.

Overview

Vocational education has long needed a new package. It must address itself to all walks of life at all levels. It must, by some means or other, influence students at an early age to select courses, and not wait until a person is ready to leave school. Natural talent must be recognized and developed.

History shows that unless funds are set aside categorically for special groups, no emphasis is placed on training for minorities. In a study by Wellford Wilms of the University of California, almost eight out of ten public and preprietary school graduates from lower level, clerical, or service-worker programs, get jobs related to their training; however, they barely earn the federal minimum wage.

Vocational education must also learn to address itself to the community in which it operates.[14] Too often community leaders view vocational education as an independent agency created to teach hobby courses to the affluent. It must also communicate with industry, both management and labor, from the "mom and pop" store on the corner, to the largest of the multi-nationals. At present, most of this communication is being done by the student or a student organization. If you expect your commodity to be consumed, it must be sold, and presently it is not being sold, and in many instances, not even advertised.

Speaking of labor, vocational education conducts most of their programs as though trade unionism was not a fact of life, which it truly is. Not only that, it is also a growing fact of life. Through its efforts, it has brought most of the social changes that we all enjoy; free public education, social security, retirement reform, minimum wage, and has done more to save the economy of the United States than any other group. On Capitol Hill and at the White House, organized labor has been one of the closet friends that vocational education has and it is time that it is included in all curriculum.

Questions one might ask of vocational education:

1. Will it supply dignity to the "World of Work?"

2. Will our present teachers be capable of teaching according to the demands of the "Working World?"

3. How will teachers gain the actual on-the-job experience needed to make vocational education feasible at all grade levels and at whose expense?

4. Can students be taught, and will they accept the ethics of the working world?

5. Will employers, who now require a baccalaureate degree, lower their standards to accept vocational education students from secondary and post-secondary programs?

6. How will present programs meet the needs for early age and grade level counseling and guidance?

7. Can vocational skill training survive in a formal education environment?

8. How many workers or older youths will be displaced when attempts are made to place teachers and students on jobs to gain work experience?

9. Will parents accept vocational training as a replacement for the time-honored dream of a college education for their children?

10. Will the occupational community be used as a source of information, or will the educators assume that they know what is best?

11. Can the total world of work be made meaningful to all?

12. How can the system be triggered on and off so as not to flood the market and yet furnish an ample supply?

FOOTNOTES

[1]U.S. Department of Commerce "Pocket Data Book - USA 1973."

[2]Ivar Berg, "Education and Jobs: The Great Training Robbery." 1970.

[3]Richard B. Freeman, "The Value of a College Degree," 1973.

[4]Joseph Kaufman et al., "The Role of the Secondary Schools in the Preparations of Youth for Employment," 1967.

Gerald Somers "The Effectiveness of Vocational and Technical Programs," 1971.

Harold T. Smith and Henry C. Thole, "Secondary and Post-Secondary Occupational Education in Kalamazoo, Michigan," 1966.

[5]"Vocational Education," supplement to *Journal of Human Resources*, 1968.

[6]Rupert N. Evans, Garth L. Mangum, Otto Pragen, "Education for Employment," 1969.

[7]"Work in America," 1973.

[8]"The Parent Gap," *Newsweek*, September 22, 1975.

[9]Report to the National Commission on Manpower, September 1975.

[10]Ray Marshall, Dan Milne and John Vrooman, "The Job Ahead, Manpower Policies in the South," 1975.

[11]U.S. Department of Labor's, "Occupational Manpower and Training Needs," Revised 1974.

[12]Alvin Toffler, "Future Shock," 1970.

[13]Rudy Oswald, "Labor's Stake in Vocational Education," AFL-CIO's The American Federationist, August 1975.

[14]Draft - National Commission on Manpower Policy to the Congress of the United States, September 1975.

section two:

Planning Instruction and Evaluating Instructional Systems

Using Case Studies as an Instructional Device

by James L. Donovan*

Our concern in this seminar is industry-education innovations, and, with that expectation, it may come as a surprise to see a discussion of the case-study method listed in the schedule. Case studies are hardly something new under the sun; they've been with us for a long time. They're a staple in training in business and industry, and it's not possible to get through a graduate business school anywhere without being exposed to a large number of case studies.

The fact that case studies have been around so long and yet continue to endure indicates, I think, that they serve a genuine need.

The case study method endures; it continues to be used for a number of reasons. First, it satisfies an interest we all have in human beings. We like stories, and case studies are stories. They're concrete and specific, and that very fact gives them an interest.

Even more important, case studies enable us to approximate real-life problems. In real life, problems don't come to us neatly packaged and labeled. Take the case of a car mechanic. People come to him sometimes with nothing more than the report of a "funny noise," and the mechanic must ask the necessary questions before he can properly diagnose the problem. A manager in a manufacturing plant finds that the reject rate in his department has risen sharply. He knows he has a problem, and then he must get to work to discover causes and cures. One of the great values of case studies is that they can present problems in the same way. They present us with facts--perhaps not even all the facts--and we have to sort them out to arrive at causes and conclusions.

Because they are specific and concrete, case studies force us to look at our assumptions and to specify our standards. Whether we're dealing with case studies or real problems on the job, we always operate on certain assumptions--assumptions about ourselves, about other people, about what makes people tick, etc. Discussing a case study can cause us to look at the assumptions we make and perhaps consider their validity. In the same way,

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case studies can make us specify the standards we want others to meet. Teachers have standards of performance for their students; managers have standards of performance for their subordinates. When a customer comes in complaining about a funny noise in his car, we would hope the mechanic has a standard by which he can evaluate the customer's report. The mechanic should know what noises the car makes when it's running properly; only in that way will he be able to tell when a car is running improperly.

A problem is a deviation from the normal or the desired state; we have to know what's normal--i.e., have a standards--in order to recognize a problem. If we recognize a problem in a case study, it's because something didn't meet our standards, and this gives use an opportunity to compare our performance standards with those of others.

Case studies can also be used to teach methods of analyzing problems, whether these are problems with people or things or systems. This is basically why the Harvard Business School places such emphasis on the case-study method.

What makes for a good case study? Basically, it has to be discussable. There must be room for more than one interpretation, at least initially, and perhaps ultimately as well. It should contain enough data so that people can develop a position and advance an interpretation. It can be long and detailed--if you've seen any of the case studies from the Harvard Business School, you know they tend in this direction--or it can be very short, not much more than a few sentences, but there has to be something there that engages the reader's attention. I am attaching examples of some case studies I have found very discussable. (I say this at the risk of seeming immodest, since I wrote two of the three cases, but I have never regarded modesty as my long suit.)

Given a good case study, how should it be used? Many people object to case studies, saying that you can't learn anything from them. It may be that some of these people want to avoid the work of learning; they want someone to tell them what it is they ought to know. Yet I've seen case study discussions carried on in a totally aimless fashion, going nowhere and concluding nothing. So it certainly is possible to use a case study so that nobody learns anything, but that's not the only way; there are alternatives.

When we use case studies, we have to have objectives we're aiming at, just as we should with any other kind of instructional device. For example, I've used one of the attached case studies, "Alexander Selkirk," to teach people how to analyze performance problems. I use the method spelled out by Mager and Pipe in their book, *Analyzing Performance Problems* (Fearon Publishers, Belmont, California, 1970). (I have discussed this in an article, "An Approach to Case Studies," in the March 1975 issue of the *Training and Development Journal*.) "The College Cafeteria Case" is a very good case for discussing motivation in work groups. The very short cases ("Henry Adams," etc.) I've used to teach managers how to set behavioral objectives. After discussing the cases, the managers are asked to set measurable objectives or goals for each of the people in the cases.

Case studies are a flexible and effective tool for personnel development. Properly used, they're both enjoyable and instructive. How could a teacher or trainer ask for more?

Alexander Selkirk, Weave Room Foreman

[redacted]wo years, Alexander Selkirk has been a foreman in one of the two we[redacted]ooms at the Minot Textile Company.

He seems to be a person who succeeds in whatever he tries. In school, he was in the top ten percent of his class, yet he worked at part-time jobs to pay most of his school expenses and was quite active in athletics. In high school and college, he was on the track team and set a record for the 880 that still stands. He also was an excellent boxer and was on the boxing team all through college. After college, he went to work for a consumer-goods manufacturer. In the three years he worked there, he was twice named foreman of the year.

He came to Minot with no experience in textiles. Some people around the mill were hesitant about putting a man with no textile experience in charge of the weave room, but Selkirk has done an excellent job. He has studied hard and in two years has learned more than many men do in ten. He has a good technical knowledge of textiles and the weaving process.

He has very good relations with the people on his shift; even the old timers who spoke slightingly of "the kid" when he first came to work now like and respect him. He has convinced the people on his shift that he has their best interests at heart and will go to bat for them. Turnover and absenteeism are lower on his shift than on any other shift in either weave room.

When he came to the mill, he launched, on his own initiative, a vigorous cost reduction program, and his shift now presents a cost picture that makes the general manager exceedingly happy.

In many respects, he is one of the most outstanding young men ever to come to work at Minot. He is a man of great talent.

But the company pays a price for this talent. He is fiercely and single-mindedly determined to make his shift the best one in Minot Textile. He is interested only in carrying out his assignments, and he doesn't give a rap for the rest of the organization.

For example, on one occasion one of his looms broke down at a time when the mill was under real pressure to get production out. He went down to the other weave room and found one of the maintenance men working on a broken loom down there. He ordered the man up to fix his loom. The man went to Selkirk's weave room because, as he later claimed, Selkirk said that the plant engineer had authorized it. Selkirk denied that he said this; nevertheless, his loom was fixed before the other foreman's.

When Selkirk needs the services of any of the staff functions--engineering, accounting, employment--he raises such a storm that, as the industrial engineer put it, "It's a whole lot easier to do what he asks and get him off your back."

The other foremen quite naturally despise Selkirk. They feel that their needs are pushed aside until his are taken care of. They feel that he will never cooperate with them unless he is directly ordered to, and even then will cooperate grudgingly.

Their dislike for him is returned in kind; he feels that they loaf along in their jobs and that they envy him because of his success. On one memorable occasion, he told the spinning room manager, a man who is one level higher in management than Selkirk, that he was "an incompetent clunk who ought to be thrown out on the street." Later Selkirk volunteered an apology, but it did little to soothe the manager's ruffled feelings.

Jack Rowland, the manager of the weave room and Selkirk's immediate boss, has spoken to Selkirk several times about the way he acts. Selkirk always responds in the same way:

"I know it gets people stirred up, but you've got to in order to get anything done around here. Besides, my record shows it's the right way, doesn't it? I'm better than these guys in every measurable way--in production, costs, turnover, morale."

And it's true; he is better.

If you were the weave room manager, what would you do?

This case was developed by the Training Department, Johnson and Johnson, New Brunswick, New Jersey. Used with permission.

The College Cafeteria Case

In my senior year I earned $500 by working eight meals a week cleaning tables and washing dishes in my college cafeteria. I have been asked by one of the instructors in the Personnel Administration Branch to relate this experience.

There were two kinds of jobs you could do in the cafeteria--you could work in the dining hall picking up trays and carting them into the dish room where the dishes and trays would be washed, or you would work in the dish room. The first day I reported for work somebody told me to go out in the dining hall and start picking up trays. Working in the dining hall was kind of nice--you didn't do very much work. All you did was pick up trays and stack them on a cart, then run them into the dish room. The guys in the dish room would be going like mad and it would be about a hundred degrees back there. They'd all be yelling and screaming and they'd throw food at you. You would run your cart in, pick up an empty cart, and come running back out again.

After a few meals in the dining hall, the schedule said I was to work in the dish room, so I walked back there and asked the guys what I was supposed to do. Somebody said, "Why don't you get on the silverware? As it comes down the line, you just take it off the trays and dump it in the buckets." That was all there was to it. Once you started working in the dish room you learned the other jobs just by watching what the other guys were doing.

The dish room was set up like a horseshoe. (See Exhibit 1.) We had a counter that ran along in front of the dishwashing machine with a space of about four feet between it and the machine; at one end there was a bridge connecting the counter to the machine. Five men worked along the outside of the counter: the first man would take all the papers off the trays; the second man would grab all the silverware and sort it; the third man would take off all the glasses and put them in racks; the fourth man would scrape the garbage off the dishes and put the empty dishes on the counter; and the fifth man would stack the empty trays and put the coffee cups in the rack. One man stood in the middle between the counter and the machine stacking all the dishes and shoving whatever was on the counter across the bridge to the man feeding the machine. One man fed the machine and another removed the finished glasses, trays, and dishes at the other end and put them on carts to be returned to the dining hall.

The events described here actually occurred. All names have been disguised. This case was developed by the U.S. Navy Supply Corps School, Athens, Georgia. Reproduced by permission.

You might think that the dining hall would be the better place to work, but it wasn't, because it was awful boring out there. The good thing about the dish room was that you had a certain amount of work to do and then you could relax. We would race to complete all the carts in the room and when we finished, we could sit out in the dining hall drinking coffee and talking until the guys in the hall had accumulated at least five carts of dirty dishes. Another thing was that the guys in the dining hall had to wear little jackets, while the guys in the dish room wore T-shirts. Besides, most of us in the dish room felt that we were doing the good work, the toughest job, when we got back there and got our hands in the garbage.

You'd think that scraping garbage would be a rotten job, but it's not so bad. It kind of hurts scraping that first plate, but once you get going, you kind of take pride in doing the rottenest job there. Of course, if I got there first, I wouldn't go to the garbage job; but if I happened to get there last and I was on garbage, I'd say, "Oh, well, what the hell, I'm on garbage tonight."

Who got what position in the dish room depended upon when you got there. Sometimes we alternated jobs for variety. Some people preferred to pull trays, but I found that after a while this was more of a pain-in-the-neck than anything else. Towards the end of the year I worked at the end of the dishwashing machine, but for nearly a whole semester I was in there scraping garbage.

We were pretty proud of the job we did in there; nobody had to tell us when to work or how to do it. We could handle all the work they could bring us. We would sit around drinking our coffee and watching the girls, and we would razz the guys picking up the trays that they were too slow. When enough trays had been accumulated--we always waited for at least five--we'd all straggle back to the dish room and get down to work. Soon we'd all be going like hell. If you had a lot of carts backed up, you could really get in the groove and then you could go and go and go.

One day they said, "Wolf isn't here; Jordan get on the dish machine." I graduated from the five-man scraping detail. This wasn't a step up--just another job. I can't remember who told me. There wasn't anyone who was particularly in charge. We did have the one guy who was nominally in charge, but I didn't even know who he was until after I had worked with him for three months. He didn't give orders or anything. Every once in a while he'd say, "Why don't we do this?", but anybody could say that or make suggestions as to what needed doing.

There was a schedule posted on the wall which said who was working which meal and where you worked. According to the schedule we were supposed to work a week in the dish room and then a week in the dining hall. Well, it got so that we didn't want to work in the dining hall. We were the "pitmen." We worked in the "pit"--that was the lowest expression we could think of calling the dish room. We pretty much followed the schedule about when to work but we didn't follow where it said we were to work.

There seemed to be a hard core who always wanted to work in the dish room and wouldn't let anyone from the dining hall back there. I suppose the guys who worked in the dining hall got used to it out there and didn't want to change either. I don't really know though because I never got to know the guys in the dining hall very well. I made good friends with the guys who worked in the pit. I made a lot of friends that I never would have made otherwise--guys from other fraternities and majors, and the kind of people I normally would not become too friendly with.

We in the pit felt proud that we were earning our own money and paying our own way through school. We were especially proud that we were earning our money at a job that most people considered too low to do. We felt superior to the guys who were sitting back and letting "Daddy" put them through school. I sometimes think that we looked down at the people out there eating. I know we thought we had more status than the guys who collected trays in the dining hall.

We hated the guys in the other dish room. We always "knew" that they were doing less work than we were and getting off five minutes earlier. I think they always felt the same way.

At first our only goal was to do all the trays that piled up as quickly as possible so that we could get back out to the dining hall and drink coffee. After a while we began timing how long it took to wipe out a typical load of trays; soon we were keeping track of how fast we could do a cart or a tray. Then the rate itself became the most important thing. Each day we would try to better our previous "record." At one point we got so good that we could do thirty-five trays in thirty-two seconds.

We'd figure out ways to do the work faster and we were against anything that might slow us down. One time the company decided to change the system somewhat. It seems that some local farmers to whom the company sold the garbage started complaining because they didn't want the garbage ground up; they wanted it whole. We had this hole, with a garbage grinder in it, that we scraped the garbage into--you simply grabbed a plate in one hand and scraped the garbage into the hole with your other hand. One of the honchos from the company came back and said, "From now on you're going to put the garbage in these garbage cans." This meant that we had to take each dish separately, turn around, and scrape it clean into the garbage cans. We did this for two nights and then we told them that we were not going to do it anymore and that they would have to turn the garbage machine back on again. So they turned the machine back on. It was just too much trouble to turn around and scrape each dish.

If a guy came into the dish room and didn't work, we looked down on him and treated him like a bum. He'd hold back the rest of us--keep us from hitting a good rate and keep us from our coffee break. Most people despite their initial disgust soon shaped up and fit into the dish room. We had one guy, though, who never did come around. He was the kind of guy who just did not care what others thought about him. This guy would show up every night about twenty minutes late and he'd slack-off the whole time he was

there. When he came late, we would "cuss him out," and we always got him about his rate. Finally, he got fired for being late and cutting too often.

Other "pitmen" would come late or cut once in a while, but as long as you didn't do it habitually, we didn't care. We would start working and just make up for you. The guy who was pulling the trays would also throw the paper and sort the silver. Everybody was late some and cut some; we'd punch in and out for each other. If a guy had an important date and had to leave a little early to get showered and cleaned up, we'd punch out for him. Or, if I had a softball game or something I'd say, "Punch me in at five o'clock, I won't be able to get here until about twenty-past." You wouldn't do this too often--only if you had a legitimate reason.

Looking back, I can't really say I liked the job, but there were some things about it that made it a lot better than you would think a job of that type could be.

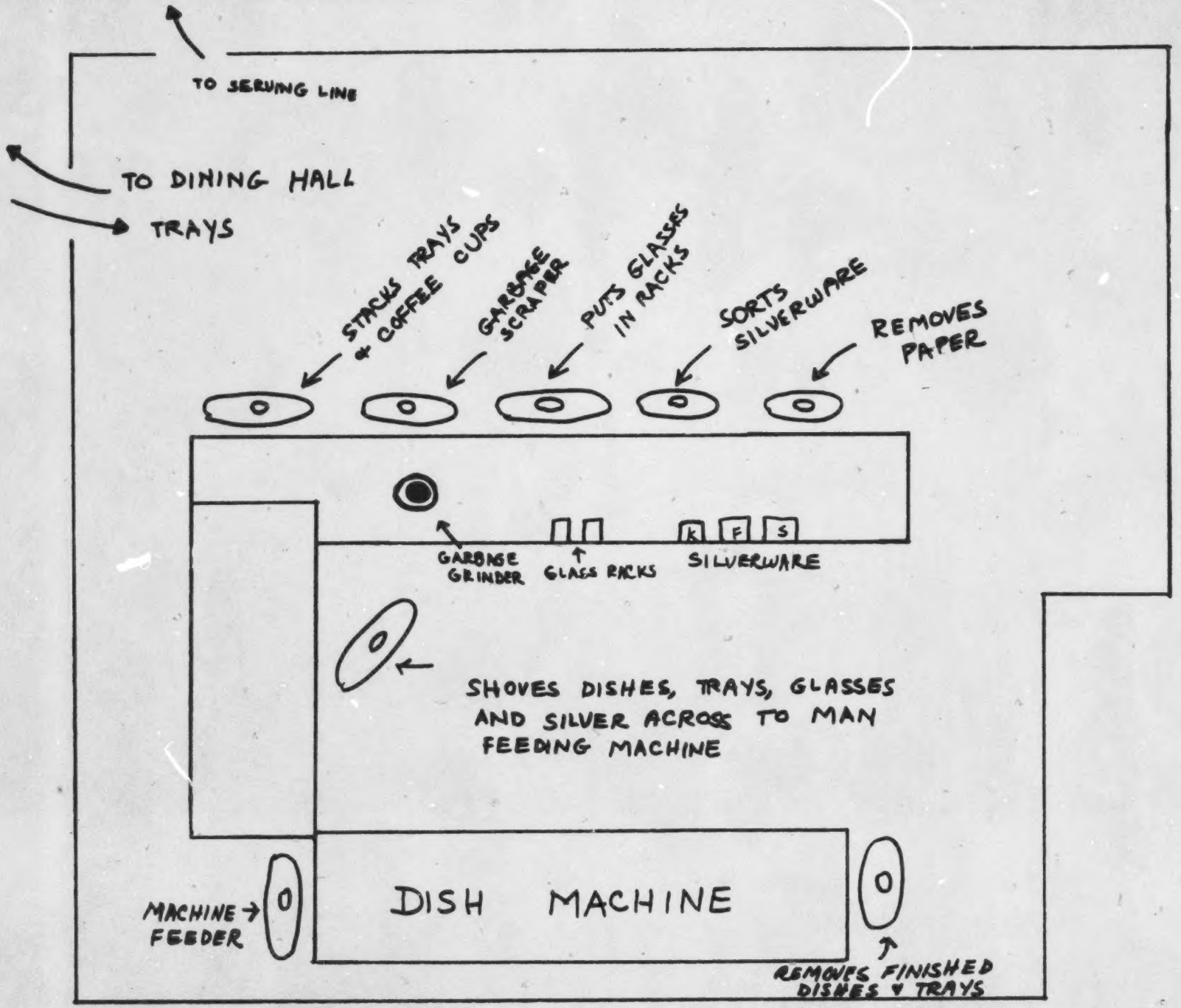

EXHIBIT I "THE DISH ROOM"

Henry Adams

Three months ago, you were promoted to the position of supervisor to replace a man who had been transferred to another location.

Your chief competitor for the job was Henry Adams. Henry is several years older than you, and he has been with the company eight years longer than you have.

He has taken no pains to hide his disappointment at not getting the promotion. He is surly and uncommunicative, and his work seems to have slipped off a bit.

Roger Bacon

Roger is in a staff position, and does not supervise anyone. He is, all in all, a good worker, and your department is a better one for having him. He has a tendency to delay routine and unpleasant chores, but much of his work is quite imaginative and helps you and the department look good.

Roger's most obvious shortcoming is his tardiness. He is invariably late in the morning. A few times you have--in a very pleasant, almost joking manner-suggested that he get to work on time. For a couple of days after you spoke to him, he came to work on time; then he slipped back into his old ways.

Thomas Cranmer and George Dewey

You have recently been promoted to department head. In your new job, you will have five first-line supervisors reporting to you. Two of these supervisors, Thomas Cranmer and George Dewey, present you with your most serious problem.

The successful operation of your department requires a great deal of cooperation among all your supervisors. But Cranmer and Dewey dislike each other quite intensely and will not cooperate with each other. When it is necessary for one man to communicate with the other, the communication is normally carried on through the secretary.

Neither of these men is an outstanding worker, but both of them perform their job in a satisfactory manner. They have been with the company for several years. You have discussed the problem with the former department head, who told you that he spoke to the men about it several times, but to no avail.

Jonathan Edwards

Jonathan Edwards is sometimes thought of as uncommunicative but the description is not completely accurate.

With friends, away from the job, Edwards talks readily and easily. But at work, he seems to be interested in playing it safe. He supervises the work of three clerks, and, when one of them objects to a policy and procedure, Edwards shrugs his shoulders and says that's the way the people on top want it.

When Edwards' boss talks to him about an error made in his section, Edwards places the blame squarely on the clerk who made the error. Edwards ignores disagreeable situations, and, when one of the clerks complains to him about the work load or working conditions, he answers, "Yes, I know, but what can you do," and then turns back to his work.

Quint Fabius and Charles Gordon

Quint Fabius is a young man, just out of the service and newly hired as a supervisor in maintenance. He has a degree in mechanical engineering and was a pilot in the Air Force. He brings a good mind and a great deal of enthusiasm to the job but little practical experience in technical matters.

One of the people he supervises is Charles Gordon, a master mechanic of long service with the company. He is a highly skilled and very competent craftsman, who has--quite justifiably--a great deal of pride and confidence in his technical expertise.

He has a great deal of contempt for the type of man he feels Fabius is; a young boy, filled with theoretical knowledge that has no connection with the practical realities of the maintenance department and totally unfitted even to supervise apprentices, much less master mechanics.

In some ways, the sorest spot of all is Gordon's realization that Fabius, despite his lack of qualifications, will in a short time be earning more money than Gordon has ever earned.

These cases were developed by the Training Department, Johnson and Johnson, New Brunswick, New Jersey. Used with permission.

Integrating Affirmative Action Efforts and Issues into the Personnel Development Program

by Althea T. L. Simmons*

AFFIRMATIVE ACTION - WHAT IS IT?

Affirmative action, now the favorite "whipping boy" of legions of employers and minority males, is a positive step toward the utilization of human resources and should not be perceived as "one of those social programs."

The Legal Basis for Action

The concept of affirmative action is embodied in Title VII of the 1964 Civil Rights Act and court decisions have established the legality of using goals and timetables, mathematical formula and preferential hiring. Title VII specifically states, in speaking to "relief":[1]

> If the Court finds that the respondent has intentionally engaged in or is intentionally engaging in an unlawful employment practice charged in the complaint, the Court may enjoin the respondent from engaging in such unlawful employment practice and order such affirmative action as may be appropriate, which may include, but is not limited to, reinstatement or hiring of employees, with or without back pay . . . or any other equitable relief as the Court deems appropriate.

The U.S. District Court in upholding the *Philadelphia Plan* noted that the strength of a society is determined by the ability to open doors and make economic opportunities available to all persons who can quality.

The Court stated:

> The heartbeat of "affirmative action" is the policy of developing programs, which shall provide in detail for specific steps to guarantee equal employment opportunity keyed to the problems and needs of members of minority groups, including when there are deficiencies, the development of specific goals and timetables for the prompt achievement of full and equal employment opportunity . . .[2]

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The Court also noted that "color consciousness has been deemed an appropriate remedial posture."

Many employees, unaware of the laws relating to discrimination and, in large measure, because of the continuing acrimonious debate over "what affirmative action is," "who benefits," "who is adversely affected," react negatively when they are called upon to implement the company's affirmative action plan.

A first step in integrating affirmative issues and efforts into a personnel development program is to insure, through well-designed training sessions, that your organization's employees, at all levels understand the rationale for affirmative action. This should include the laws mandating affirmative action and the standards enunciated by the Courts.

The widespread confusion surrounding the issues of:

- quotas
- goals and timetables
- preferential hiring
- merit employment
- lowering of standards
- layoffs and seniority

must be addressed in a factual, positive way if the equal employment opportunity program is to be successfully implemented.

The Test of Discrimination

The reaction of many employers to affirmative action is "We don't discriminate." Prior to 1965, the test of discrimination was purpose or motive (evil intent) to subordinate members of a class.

EXAMPLE: "Males only"

"No Irish need apply"

Over the last ten years, the Courts have passed through several stages in how discrimination works and additional standards have been added. The standard of unequal treatment, where the focus is not on the intent, but the actions of the person accused of discrimination.

EXAMPLE: Imposition of a "work experience" requirement which worked against minorities and women since they were traditionally excluded from particular "qualifying" job categories.

The third standard developed in legal decisions is the unequal effect[3] test which is typified in the landmark case of *Griggs v. Duke Power Co.* where the Supreme Court considered two hiring standards applied equally and uniformly by a company, which required applicants to have a high school diploma and pass a written test. The Court determined there was no "evil intent" nor "unequal treatment." The Court concluded that the company's employment practices had an "unequal effect" in that their impact was to exclude minority group members and was not related to job performance.

ISSUES

One of the commonly heard statements regarding affirmative action is that it undercuts MERIT EMPLOYMENT. Merit employment is still the order of the day under Equal Employment Opportunity laws. Title VII established a traditional "Merit Employment" principle of ability to perform the job for which the applicant is being recruited, selected or promoted. Extraneous factors of race, national origin or sex must not be a factor in the employment process or system.

The granting of PREFERENTIAL TREATMENT to minorities and women has occasioned charges of reverse discrimination never heard when Congress in 1944 passed the Veterans Preference Act, stipulating that veterans be given special consideration when seeking employment with the federal government.

The issue of "absolute preference" was before the Eighth Circuit Court of Appeals in *Carter v. Gallagher* where the Court said:

> . . . We think some reasonable ratio for hiring minority persons who can qualify under the revised qualification standard is in order for a limited period of time, or until there is a fair approximation of minority representation consistent with the population mix in the area. Such a procedure does not constitute a "quota system" . . . the trial court (district court) is possessed of the authority to order the hiring of 20 qualified minority persons but this should be done without denying the constitutional rights of others by granting an absolute preference.[4]

Courts, under their powers of equity, may grant affirmative relief. Prior to 1971, Court orders in employment discrimination cases, with a single exception,[5] provided affirmative relief without preferential hire. After the Court addressed the question of "unequal effect," a number of Court orders have called for remediation in the form of preferential hire for a stated period of time or until a specific goal of minority participation is reached.

In *Swann v. Charlotte Mecklenberg Board of Education*,[6] the Supreme Court spoke clearly and directly to the distinction between "preferential treatment" and "remedial treatment" which is necessary to eliminate discrimination. In *Swann*, the Court said:

> All things being equal, with no history of discrimination, it might well be desirable to assign pupils to schools nearest their homes but all things are not equal in a system that has been deliberately constructed and maintained to enforce racial segregation. The remedy for such segregation may be administratively awkward, inconvenient, and even bizarre in some situations and may impose burdens on some; but all awkwardness and inconvenience cannot be avoided in the interim period when remedial adjustments are being made to eliminate the dual school system. (Emphasis added)

The opponents of affirmative action and the media have been largely responsible for the confusion which exists in the minds of many persons regarding the terms, "quotas," "reverse discrimination," "remedial treatment," and "goals and timetables." GOALS AND TIMETABLES is one of the most controversial concepts in affirmative action with opponents of the concept frequently using the term interchangeably with quotas. A hiring system which sets a fixed numerical or percentage objective which is not designed to remedy proven discriminatory practices is a QUOTA system and is illegal.[7] Quotas are exclusionary. GOALS are flexible targets for inclusion set by the employer and they attempt to predict what the employer's work force would look like without discrimination based on race or sex. Failure to meet a goal does not automatically indicate noncompliance provided that good faith efforts have been made to meet the goals. In making an effort to meet the goal, the contractor may not discriminate against any qualified applicant or employee on grounds of race, color, religion, sex or national origin. The Court in *Swann* found that the use of a mathematician or racial ratio of white to black students was "no more than a starting point in the process of shaping a remedy, rather than an inflexible requirement."

The trainer must be careful to make the distinction between goals required under the Executive Orders[8] and Court-ordered goals. Under the Executive Orders, the employer does his own analysis and sets reasonable goals. When legal avenues are pursued, the federal government makes the analysis, sets the goals and the Court may order the hiring of a lesser qualified person or give preference in hiring to persons of an "affected class," e.g., women or minorities, for a limited time only after a finding of discrimination.

The myth that widespread preference is mandated by the law to lesser-qualified members of affected classes is not substantiated although isolated instances can be cited where an employer has misinterpreted the guidelines and ascribed a preference to hire that was not justified by the regulations.

The Court of Appeals in *NAACP v. Allen*,[9] where there was a continuous pattern and practice of racial discimination in the hiring of state troopers, rejected contentions that affirmative action hiring required discrimination against white applicants and required the appointment of less qualified black applicants, stating:

> Until the selection procedures used by the defendents here have been properly validated, it is illogical to argue that quota hiring produces unconstitutional "reverse" discrimination, or a lowering of employment standards, or the appointment of less or unqualified persons.

The affirmative action controversy has been heightened by the economic downswing, since a strict adherence to the seniority system would wipe out newly-won affirmative action and equal employment opportunity gains. The seniority system in collective bargaining agreements impose residual discriminatory effects upon women and minorities and others similarly situated, even though present laws mandating affirmative action are supposed to eliminate discrimination.

The recession has forced employers into a Hopson's Choice where they are beset on the one hand with possible liability under Equal Employment Opportunity laws mandating affirmative action and, on the other hand, liability under collective bargaining agreements. The employers who have turned to the courts have received varying and oftimes conflicting answers. The issue is before the U.S. Supreme Court in *Frank v. Bowman Transportation* and argument is set for early November.

Many "affected class" members have been reminded that the "Compromise of 1877" sharply curtailed legal gains won by blacks as a result of the Civil War. "Rosie the Riveter" and blacks also remember that, after World War II, they were the victims of sharp cutbacks in employment opportunity that abounded during the conflict. This type of periodic relegation of the same class of workers to layoff is perceived by many victims as an act of discrimination.

In the recently decided U.S. Steel Case, Judge Pointer found that the Fairfield Works' seniority system - the product of collective bargaining between the Company, United Steel Workers of America and various locals - locked blacks into lower paying and less desirable jobs. The Court ordered the seniority rules scrapped and instituted a new plantwide seniority system intended to "treat blacks and whites alike at the steel company."

Government agencies, like the appellate courts, are not in agreement on the affirmative action-seniority issue. The Civil Service Commission has taken the position that it is improper for the federal government to make "such management decisions for state and local authorities or private employers." The Justice Department points to the legal challenges pending in the Courts against employers concerning the issue of layoff policies and infers that the issue should be settled by the Courts. Meanwhile minorities and women, hired last because of systematic discrimination practices are vulnerable. If affirmative action is to become a reality for the "have nots," serious thought must be given to alternatives which could include work sharing, rotated furloughs, early retirements and numerical ratios.

EFFORTS

An employer's commitment to affirmative action must permeate every department, division, branch or work unit with job performance being measured by the "bottom line."

The personnel department, with the responsibility for employee training, has a major role to play in designing and conducting training seminars for supervisory personnel to communicate the requirements of the company's affirmative action plan, legal rulings and individual responsibilities to equal employment opportunity. The department's responsibility should include, as a minimum:

- orientation sessions for new hire
- "awareness" training
- management development sessions for upward mobility
- identification of promotable people
- supervisory development programs
- training programs geared to job restructuring

Affirmative action affects <u>all</u> employment practices; thus the training manager must be prepared to design training programs around recruitment, hiring, transfer, promotions, benefits, layoffs and terminations and unexpected problems which arise during the implementation process.

A word about "attitudinal or awareness" training. Since racial and/or sexual stereotypes are documentable barriers to equal employment opportunity, "awareness" training is a key component in preparing managers and supervisory personnel for effective participation in an affirmative action program. Care should be exercised in designing and conducting an awareness program so that male managers become more conscious of their attitudes with minimal threat in the initial stages of the session design. The use of attitude surveys, general factual information,[10] as well as internal organizational data is helpful in setting the stage for future problem solving and action planning activities.

Training sessions for affected class employees might well focus on career counseling, career ladders, assertiveness training. The employee should be counseled on outside educational programs with a view toward gaining knowledge and skills to prepare the employee to meet the present and anticipated needs of the company.

In the final analysis, the effectiveness of your personnel development activity must be measured by the "bottom line."

THE HUMAN RESOURCE

Asset

(+)	(-)

FOOTNOTES

[1]Title VII, Civil Rights Act of 1964 (as amended by the Equal Employment Opportunity Act of 1972).

[2]*Contractors Association of Eastern Pennsylvania v. Secretary of Labor*, 442 F.2d 159, 3 FEP Cases (erd Cir., 1971), cert. den. 404 U.S. 854, 3 FEP Cases 1030 (1971).

[3]*Griggs v. Duke Power Co.*, 401 U.S. 424 (1971).

[4]452 F. 2d 315 (8th Cir. 1971). Since the minority population of Minneapolis was only 5%, the Court ordered a "one to two ratio . . . until 20 qualified minority persons have been hired."

[5]*Vogler v. McCarty*, Inc., 294 F. Supp. 368 (1968), aff'd sub. nom *Local 53, Asbestos Workers v. Vogler*, 407 F. 2d. 1047 (1969).

[6]402 U.S. 1 (1971).

[7]Section 703 (j), Title VII, Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972.

[8]402 U.S. 1 (1971).

[9]340 F. Supp. 703 (M. D. Ala.) (1972), 4 FEP Cases 318.

MINI-CASE

"UNDER THE GUN"

You are personnel officer for the Icon Manufacturing Company. The company has signed a comprehensive agreement to assure equal employment opportunity for minorities and women with the Department of Labor and the Equal Employment Opportunity Commission.

Under the agreement, the company will make back-pay settlement and initiate a new promotion pay policy and wage adjustment. The company will develop goals for increasing the utilization of minorities and women in each job classification.

Women and minorities hired between July 2, 1965, the effective date of the Civil Rights Act of 1964, and December 31, 1974 will be assessed to determine their interest and potential for higher level jobs.

You have been asked to outline a special development program to prepare these under-utilized groups for promotions as they become available.

TASK:

Given your own experience and knowledge of your company, outline a personnel development program to prepare women and minorities for upward mobility.

MINI-CASE

THIS WAY UP

You have been asked to develop a training program to place more women on the management career ladder. Your present personnel development program includes:

- a management assessment process
- an entry level trainee program which uses job rotation as a key element of the management training program
- progress reports to top management

Using the existing personnel development program of your company:

1. (a) What elements are most likely to need changes?

   (b) What additional data is needed for decision-making over what timespan?

   (c) What elements are most likely not to need change? Why?

2. Select the most important element from 1 (a) and justify your selection.

3. Brainstorm changes and additions that might be made.

4. Evaluate the brainstormed results and prioritize them in terms of getting more women on the management career ladder.

Evaluation of Instructional Systems

by William F. H. Ring*

The purpose of this paper is to describe a model of a training system which has been used to estimate and categorize costs. It is based upon Calspan's experience in performing a Systems Approach to Training (SAT), study for the crew of the B-1 air vehicle. SAT is a technique for applying system analysis to an Instructional System Design (ISD) (see references). No specific results will be given because they would not serve my purpose in presenting this paper, and because some of this data represents estimates which the Air Force needs to restrict pending procurement of the training devices.

The paper will first discuss the concept of a SAT/ISD study. This will lay the groundwork for the main topic which is the calculation of training system costs. Models will be described for estimating and tabulating system costs. Finally, some example results from the analysis will be presented.

The terms training and trainer are used deliberately in this paper to describe a particular attitude with respect to what we hope to accomplish with the trainers. We hope to bring each of the trainees to a predetermined level of competence and not beyond. This attitude enters into the systems analysis and will be discussed below.

It is useful to review the SAT/ISD concept to understand the role of evaluation in the process. The steps performed in a SAT/ISD are shown in Figure 1. An input is a description of the job requirements, a task analysis. This is a list of the things which must be accomplished during performance of the job. An element in the task analysis data base contains the description of a task. Someone does something. The data base answers the questions: How does he know when to do it? What does he do? What does he do it to? How does he know it is done? How well must he do it?

We have constructed a computerized data base management system to record and manipulate the task analysis for the B-1 aircrew system. The introduction of the computer had both helpful and harmful aspects. The relatively rigid formatting introduced by the computer helped to clarify the behaviors. Correlating the controls and displays against the task analysis

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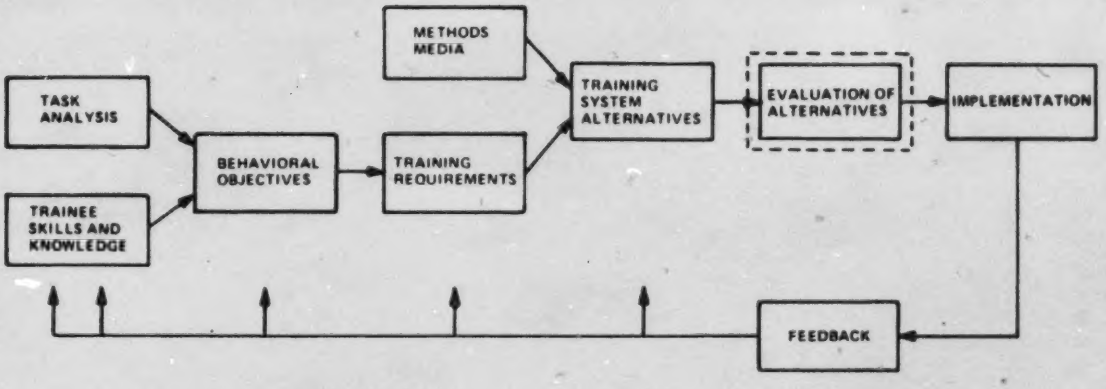

Figure 1 INSTRUCTIONAL SYSTEM DESIGN (ISD)

data base can lead to discovery of missing data. On the other hand, encoding effort was equally required on relatively unimportant tasks.

The characteristics of the trainees are an important input to the SAT/ISD as well. Their description is in terms of the skill and knowledge which they can reasonably be expected to demonstrate. For each B-1 subsystem we identified the trainees who had used it previously, had used a similar one, had used a different one for the same purpose, or had never used such a subsystem.

Behavioral objectives are constructed from the task analysis. Associated with a given behavioral objective is a set of enabling objectives which are skill and knowledges needed to perform the given behavioral objective.

The enabling objectives in turn become behavioral objectives until, at last, one reaches the skills and knowledge of all of the incoming trainees. It is possible and necessary to recognize common enabling objectives to avoid duplication in the training syllabus.

The complete set of behavioral objectives, the linkages that indicate which objective enables which along with performance standards comprise the training requirements.

The syllabus is developed from the training requirements and the known characteristics of methods and media. The syllabus is an ordered set of instructional blocks which are associated with the training objectives. Instructional blocks include the training objectives to be accomplished, the method and media of training and the estimated time to complete.

The task of flying a military aircraft involves learning about a large number of controls and displays which have the relatively simple functions but may need to be manipulated rapidly in the proper sequence, and in some cases, with considerable skill. Much of the training for this type of job is best accomplished using simulators, trainers or the aircraft itself. We originally considered a large number of training media and components. We later narrowed the selection down to a very limited number of devices which were defined in terms of the type of stimuli and interaction with the trainee.

The cost evaluation phase involves determining the costs of options for the training system. The candidate system with the best measure of effectiveness is in general the preferred system assuming that the training objectives are not compromised.

Finally, there is the implementation phase in which the training occurs. Feedback is used to refine the description of the minimum required incoming trainee skill and knowledge, to check the estimates of the time and resources required to complete instructional blocks and to add or delete instruction based on the performance of the trainees in the field.

This paper deals with the cost evaluation phase of a SAT/ISD program. Our work has approached the evaluation as a problem in systems analysis. The objective of the training system is to bring the performance of trainees to an established criterion. The trainees are to demonstrate the established level of performance for all of the training requirements. The level of performance is a quantitative statement of skill or knowledge which is included as a part of the description of the training requirement. The number of trainees is an external constraint. The measure of effectiveness for the training system was selected to be life-cycle cost.

In systems analysis the measure or measures of effectiveness are not necessarily the only factor on which decisions are made. In the case of the B-1 aircrew training system, the time-flow of funds and type of funds (acquisition vs operations) are important. Flexibility and the ease of modification of the training system may also be of concern. The role of the decision-maker is to weigh the measure of effectiveness against the intangibles of the sytem. Another example of an intangible consideration is motivation. A candidate system might be rejected if it would tend to reduce morale and thereby increase turnover by some unpredictable amount.

The analyst with a single measure of effectiveness has the ability to vividly demonstrate the tradeoff of the effectiveness measure with qualitative variables. For instance, we studied the tradeoff of initial acquisition for operating expenses. In our case we could show that the acquisition costs, while large, were dominated by operating expenses. Thus, if one chooses to lower the acquisition costs by reducing the purchase of training devices, intending to use the aircraft instead, the life-cycle cost suffers due to the high cost of flying. The single measure of effectiveness in our case, life cycle cost provides a ready measure of the penalty one incurs for selecting an alternative with some desirable characteristic not possessed by the lowest cost system.

A second role of the evaluation in the B-1 programs is to provide planning factor data to other analysts who treat the air vehicle crew training system as a subsystem. Parametric analysis of the major external influences, crew ratio (the ratio of crews to aircraft) and the number of air bases, were made.

A large amount of bookkeeping is necessary in order to compute costs. To perform this work we developed two computer programs TRAM* and a much simpler, TROLIE.** It is most useful to describe our approach to the evaluation rather than the programs themselves.

We define a course as the instruction required to train a single position on the air vehicle crew, say the copilot. Within a course, one may provide multiple tracks. In our case, separate tracks were defined for transitioning B-52 copilots, KC-135 copilots, and undergraduate pilot trainees--the sources of trainees for the copilot position. Training demands are calculated on the basis of aircrews needed to man the fleet and to replace attrition. We define the sources of trainees in terms of their capacity to provide trainees on a time-phase basis. Associated with each type of trainee is a priority or preference. The highest priority source is exhausted before the next is tapped. Other algorithms for selecting among trainee sources are probably equally good, but this was used since the cost-to-train varies from track to track and the priority reflected this cost.

The concept of a resource must be introduced next. Associated with a resource is the resource generator. The resource is time in a simulator; the generator is the simulator itself. If the resource is an instructor hour, the generator is the instructor. All expenses are determined by the use of resources or the ownership of resource generators. The resource generator has as a part of its description its yield or capacity to produce resources. By knowing the use of a resource and the yield of its generator, one can compute the number of generators (e.g., simulators) needed to supply it. While this seems to be a tautology, the concept has proved to be the key to successful bookkeeping of costs.

Associated with each track is the network of instructional blocks. The instructional blocks are described by the time to complete and the resources used. Resources can be used by either a trainee or by a class. A class uses a classroom or instruction; a trainee uses an hour on a trainer. By separating the training into tracks, resource use is dependent on both the number of trainees as well as the type of trainees which are undergoing training. When training is accomplished with part or full crews, resource use is charged to one member. As a formula, one has the matrix equation:

$$\text{Resource Use} = \text{Trainees/Track} \cdot \text{Track-Resource Use/Trainee}.$$

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*Training Resources Analytic Model
**Training Resources Organized for Logical Integration of Expenses

The TRAM program performs this operation over relatively short periods. That is, we are concerned with how many hours a trainer is used as well as with determining if queues will form waiting for a turn on the device. TRAM has means for limiting resources and for handling the resultant conflicts in resource needs. The TROLIE program is only concerned with the former problem--the use of resources.

Returning to the definition of a resource generator, one can think of resource generators as faucets which fill up "buckets" on a conveyor belt with resources. At the end of the belt is a delivery point where users of the resource come to use it. If no one comes, the resource in the bucket is lost. Thus, the bucket represents a period of time over which the resource is available. The level to which the bucket is filled is dependent upon the number of faucets (resource generators). See Figure 2. The "bucket" represents the short-term planning horizon for the devite. A typical value used for a bucket is one day. This implies that a trainee will use the device whenever it can be scheduled for him within a one-day period. When planning for the acquisition of training devices, it is the peak resource use per bucket (training hours used) which must be met by the generators (trainers). Optimum use of resources will keep the average and peak use nearly equal.

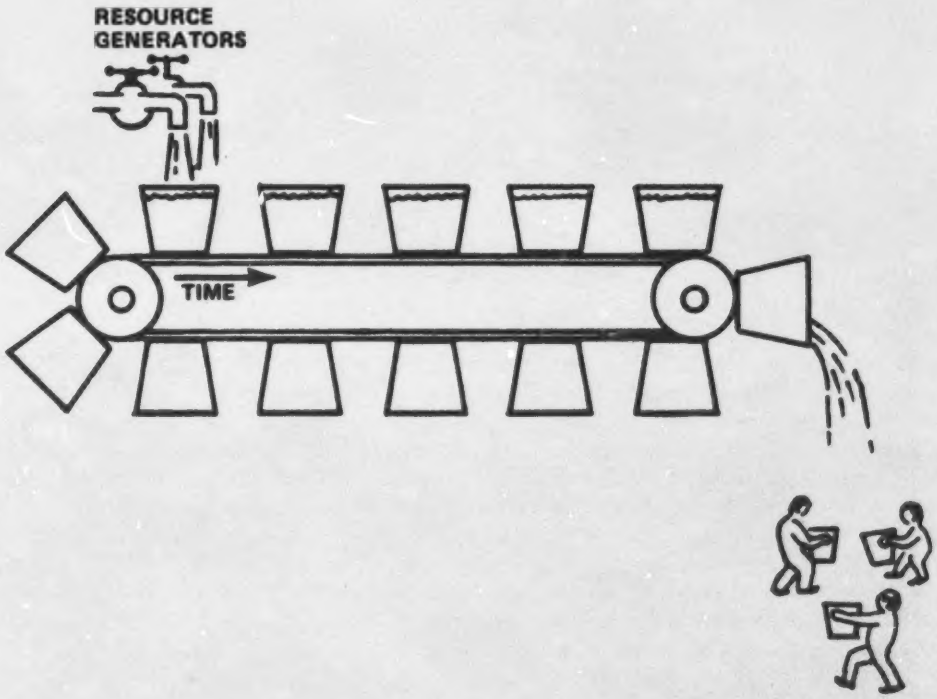

Figure 2 BUCKET CONCEPT

In the main part of the TRAM program one can limit the use per bucket as a means for limiting the number of resource generators (devices) of a specific type. Should the system run out of resources within a bucket, the trainee may be delayed or lagged, or alternatives might have been specified. An output of TRAM and TROLIE is the amount of training resources used in each bucket. In another phase, the resource used is tabulated and economic data is generated.

The economic analysis begins by tabulating the use of each resource. A yearly reporting period is standard and an arbitrary length periodic report is also generated. The total, peak, and average use per bucket over the reporting period are of interest. The required number of resource generators (devices) is calculated from the yield of a single resource generator and the peak use of that resource.

In addition to the set of resources defined, we allow for one resource to introduce secondary use of other resources. That is, time on a simulator can point to instructor time and facilities. Secondary resources can be dependent on either the primary resource use (instructor time is a good example), or on the number of resource generators (facilities is a good example).

If demand for a resource is reduced, then the number of generators needed to meet the demand is reduced. Some generators can be "returned." This is particularly true for operators and instructors who can be transferred. A complex trainer has only salvage value and is therefore not returnable.

An example of the use of the above concepts is the use of the resource instructor time. Instructor time was specified for each instructional block. Instructors are primary resources. The number of instructors required for each period is calculated from the quotient of the instructor time needed and the instructor yield. We round up fractional instructors. The instructor faculty can be reduced if the demand is reduced. Each instructor is provided with an office. While we allow for instructor transfer, we cannot return an office. When costs are calculated, the operations and maintenance on the offices continues on the assumption that appropriate uses will be found for the extra space after the peak has passed.

Costs are divided into research, development, test and evaluation (RDT&E); acquisition; operations and maintenance (O&M); facilities; continuing support (modification and improvement); and instructional material. RDT&E is a one-time cost, which is independent of the resource use. Acquisition is dependent upon the number of devices required. We can optionally apply a "learning rate" to acquisition cost. If one purchases twice as many devices, the average price paid can be reduced to some percentage, say 90%, of the original price. To estimate the cost of M items when N items are already acquired, one computes the cost of M + N and subtracts the cost of N. O&M costs are incurred each year and are dependent on the amount of resource used and the number of generators. For instance, flight time, an O&M cost, depends on the number of flying hours, but instructor pay which is also an O&M cost depends upon the number of instructors. The dependence of O&M costs on the

number of resource generators optionally includes learning. Facilities are all treated as secondary resources. There is a construction and an O&M cost associated with them. We used a square foot of floor space as the basic unit for facilities.

Continuing support represents the inevitable modification and improvement of the training devices. We treated these costs as dependent on the first unit cost and the number of units (with learning to account for the RDT&E component of the continuing support).

Instructional material preparation is estimated as a function of the device and the number of hours of instructional material to be prepared. Since this is a one-time cost, it can be combined with RDT&E. Instructional material also requires continuing support. This cost is independent of the number of generators (devices) because the preparation costs dominate the production costs of instructional material.

While no specific results are going to be presented, two illustrations from our results are of interest.

The relationship between flying time and trainer time for refresher training was investigated. Our analysis provided for several cases in which the time programmed for relatively inexpensive ground trainers is replaced by expensive aircraft time. Figure 3 shows the results. The acquisition costs were greatly reduced because we are recommending a training facility at all air bases. The reduction in ground trainer cost was overshadowed by the increase of flight time costs. Thus, it appears that the investment in training devices is a wise one.

A second interesting result was provided by limiting the number of trainees. A trainee demand occurs whenever an aircraft is delivered or when an airman quits or is transferred (suffers attrition). Figure 4 shows the situation. Deliveries are to be made at a relatively constant rate for a period of time. The new trainees are to man these aircraft as they are delivered. Later the graduates suffer attrition. Attrition is modeled as a percentage of number of crews in the field at a delayed time. The use of a delayed time accounts for the fact that crewmen in a new assignment are unlikely to immediately quit. The resultant training load has a peak as the last aircraft are delivered. The peak is followed by a valley. By refusing to allow for replacement above a given level, we reduced the peak use of resources and hence the total devices and facilities. It turns out that very few devices are saved as a result of sharing of resources between the training school and an air base located at the same place. However, acquisition was delayed and the peak number of instructors was reduced. The small saving in O&M and in the acquisition of offices for the peak number of instructors amounted to almost double the pay of an active-duty crewman for each man-year of delay. If the delay were also reflected in decreased replacement training, which such a delay might produce, the savings would be greater still.

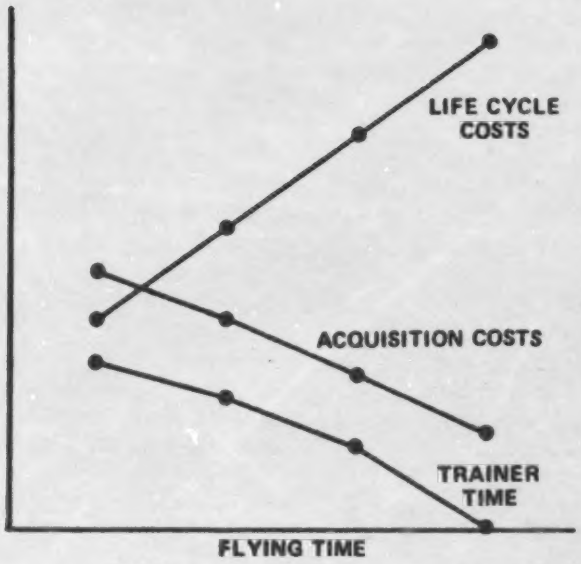

Figure 3 FLIGHT-SIMULATOR TRADEOFF

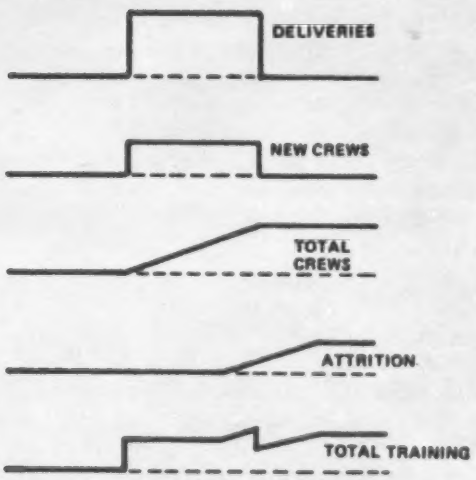

Figure 4 ATTRITION AND TRAINING

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This paper has presented a model for the development of costs and the tabulation of these costs into categories. The model has been useful in evaluating B-1 aircrew training concepts and is believed to be useful for the evaluation of a wide variety of other personnel systems. The model can provide the cost portion of a cost-effectiveness analysis. However, the answers produced by our computer programs or any other program are still no better than input data. Unfortunately, we found that many of our most important costs are poorly known and therefore the absolute value of the results are equally poor (although the relative magnitudes are considerably more valid).

On the other hand, we found a high sensitivity to some of the alternatives. The least-cost alternative is therefore robust to variations in the inputs. Other variations showed very low sensitivity. Selection of a preferred alternative can then be based on other intangible considerations.

ACKNOWLEDGMENT

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section three:

Industry-Education-Labor Cooperation

An Industry-Education-Labor Council that Works

by Ronald D. McCage* and Paul B. Musgrove**

Exploding Some Myths

It is very appropriate that the theme of this year's National Vocational Education Personnel Development Seminar is focused on the topic of industry-education cooperation. The topic is especially timely since industry-education cooperation is often assumed to be an integral element of our vocational education system. The recent emergence of the concept of career education has given new impetus to the necessity for cooperation between education and industry. The advent of career education has caused us to suddenly realize that industry-education cooperation is an absolute essential, and that we have very few sound models available to pattern after. We have also begun to realize that there is very little evidence available to support the fact that a real day-to-day working relationship actually does exist between school and the world of work in very many places.

Many of us can show that we do use advisory councils for each of our vocational program offerings. We can show that our councils do have representatives from the business, industrial world. Most of us can readily prove that business, industry, and labor are on the mailing lists that we use to conduct our annual manpower and follow-up activities. Many of us have established relationships to the point that selected business and industries do provide us work stations for our cooperative students and potential placement for our graduates.

These types of industry-education cooperation are highly commendable and should not be discouraged or discontinued. Instead, they should be used as a springboard to a much more meaningful relationship. Business and industrial representatives must be asked to become more directly involved in our program planning processes and must be used as resources in our day-to-day classroom activities. We must also learn how to go into their facilities in search of real world educational experiences. In short, we must become partners in education.

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**Paul B. Musgrove is Executive Director of the Tri-County Industry-Education-Labor Council, East Peoria, Illinois.

Many times we have heard that industrial and business people are not interested in what happens in the schools. We have heard that they really don't want to participate in our planning and classroom activities. We tend to forget that their children make up our class rosters. In the past five years our division has funded several career education projects at the local level. If we have learned one thing through this involvement, it is that business and industrial people do want to become deeply involved. Their most common response is that "No one has asked me." Have you ever asked them to participate? They simply have not been asked in many cases because most of our teachers are afraid to as them. We, as teacher educators, have not prepared them to deal with the stranger in the classroom or taught them how to design a truly meaningful educational experience in the field or outside the classroom.

New Emphasis Appears

With the advent of the career education, our professional journals have been flooded with articles based on this concept. Terms such as school-work councils, community-education councils, and industry-education-labor councils have become quite common in the literature. Writers are frequently recommending that we establish industry-education councils in our local communities. Current CETA Guidelines require planning councils at both the state and prime sponsor level. Rumors tend to indicate that our new vocational education legislation may follow suit in some form.

One of the most relevant statements in support of today's topic of discussion appeared in July 1971, in "A Summary of Final Report of the State Level in Career Education - Bridging the Gap: A Study of Education to Work Linkages," a project conducted by the College Entrance Examination Board for the Education and Work Group of the National Institute of Education. The statement appeared as Number Four of a series of twelve proposals aimed at removing barriers to the implementation and success of career education. The statement reads as follows:

> Community education and work councils, comprised of educational, business, labor, government, and other community leaders, should be established. Sponsorships may come from the educational sector, the work sector, or the community sector--whichever is willing to assume the initiative. However organized, the councils should have authority and responsibility to organize community resources in order to be of maximum benefit to schools and colleges . . . (page 9).

This statement gives emphasis to our discussion this morning and is particularly relevant in terms of supporting the need for establishing some mechanism to coordinate the efforts of education, labor, and industry so that our schools become a better place for all children.

Bringing It Down to the Local Level

If I may change directions, I would like to digress a bit and regress to the first person. Some of you who know me know that I am a graduate of Texas A&M and that makes me a true blue Texas Aggie. During my tenure at College Station I can recall a 1968, 1969, and 1970 football team that often had to drop back and punt; a football team that was filled with that old Aggie spirit and downhome Texas motivation, yet unable to really put together a top-notch ball club with the exception of the 1967 Southwestern Conference and Cotton Bowl champs. In recent years, however, for those of you that have an interest in college football, the Aggies have put together some top-notch clubs that can and will, if I may have the pleasure of being a bit optimistic, return to their powerhouse status of earlier years which seemed to end in the late fifties with the passage of Coach Paul "Bear" Bryant to Alabama.

I have bored you with my football biases for the last few seconds for two very good reasons. First, football is fashionable and most everyone can relate to it, and secondly, because the "drop back and punt" syndrome I mentioned earlier has particular relevance to the field of research and development and personnel development in occupational education. All too often we research and developmental types tend to conduct descriptive studies, do comparative analyses, run correlations, conduct developmental activities, and develop personnel when it is fourth and long yardage, instead of making the big plays early in the series. We often find it necessary to either punt the ball or take a chance and gamble with the bomb on fourth down.

It does not necessarily follow that one who is a researcher is also a "soothsayer." Those of you who have completed or are presently writing dissertations or conducting research readily realize that if you can identify or target in on the real problem, you have already moved through about one-half of the research process. In the same respect, if one can identify problems facing occupational educators, you are far down the road and can systematically begin pragmatic steps to solve those problems. We in Illinois are of the opinion that to identify the problem, you must go to the practitioner. I used the quote earlier in this presentation to show that here, finally in 1975, we have support for the need for industry-education-labor cooperation by a group sponsored by the National Institute of Education when at least in Illinois we had occupational educators as early as 1972 stating and requesting our help in coordinating industry-education and labor. We don't have to drop back and punt.

The Council: Locally Initiated

I am Director of the Research and Development Unit for Vocational and Technical Education in Illinois. In your state my unit would most likely be called the RCU. The Research and Development Unit in Illinois is one of seven operational units of the Division of Vocational and Technical Education. Its major function is to administer Part C and Part D funds for research, developmental, and exemplary activities as outlined in the 1968 Amendments to the Vocational Education Act of 1963. The Unit carries out

this function by contracting with local business and educational agencies for the purpose of performing selected activities which lead to the ultimate solution of problems facing occupational educators in Illinois. Priorities are established each year to help the research unit identify where money can best be spent to solve problems facing occupational educators. Those priorities are established by and for local educational agencies in Illinois. Occupational educators at all educational levels tell us their problems, and we initiate research, developmental, and exemplary activities that we think will solve those problems. At a time when considerable criticism is centered on our educational system, considerable emphasis must be placed on correcting the ills which exist. In my mind, much of the identification of curriculum development, personnel development, research, developmental, and other needs should come from the local level. Too often we work on priorities created at some level above us or tend to operate in our ivory tower syndrome completely out of touch with the real world.

The Tri-County Industry-Education-Labor Council which will be described by Paul Musgrove is an excellent example of how both the research process and the local input process work together to identify and solve problems in Illinois. In FY 72 the Illinois Research and Development Unit sponsored a project in Peoria, Illinois, in which local career educators recognized the need to coordinate the vast number of industry-education-labor activities and resources in the Peoria metropolitan area. Before initiation of this coordination effort, occupational and career education programs were extremely fragmented, business and labor leaders were frustrated with the schools (often being called on many times in one month to talk to classes in the same school), and in general, relationships between the district and the public it served were just not organized. Staff in Peoria District #150 had the foresight to recognize the need for coordinating the resources of the school and community in the district and hired a staff member with that intention. A staff member that could help the industry, education, and labor representatives in Peoria to "get it all together" in terms of assisting the local schools in their job of preparing students for their place in the world of work.

It was soon recognized, however, that community resources and educational agencies outside of the city of Peoria should also be participating in this type of program, and from this local foresight and the cooperation of the Division of Vocational and Technical Education, the Tri-County Industry-Education-Labor Council was formally established through a Research and Development Contract as a general not-for-profit corporation under the laws of the state of Illinois. Whether this type of Council is the ultimate answer or only a possible answer is yet to be determined. Right now it has been highly successful in Peoria, Illinois. It very well could have some aspects that will work in your local community.

I am sure that you are really interested in learning about the more pragmatic details of how the Council was established and what it does for schools and community representatives in Tazewell, Peoria, and Woodford Counties in Illinois. At this time it gives me great pleasure to introduce Mr. Paul Musgrove, an executive who has retired from a career of several

years as Industrial Relations Counsel for Hiram Walker and Sons, Inc. which has a major operation in Peoria. Paul is now executive director of the Tri-County Industry-Education-Labor Council. His many years in the business and industrial community has added much to the success of the Tri-County Industry-Education-Labor Council. His point of view on this topic can add much to our conference today.

INDUSTRY-EDUCATION-LABOR COUNCIL THAT WORKS

In the heart of Illinois are located some of the world's leading manufacturers, to name a few, Caterpillar Tractor Co., CPC International, Inc., Wabco Construction and Mining Equipment, and Keystone Steel and Wire Co. The area has the largest hospital-medical-health facilities, including Peoria School of Medicine, in the state of Illinois outside of Cook County.

The area has a population of approximately 350,000 and more than 82,000 students attend public, parochial and private schools, K through 12. More than 4,000 teachers and educators have individual contracts with school districts. Eureka College, Bradley University and Illinois Central College are located in the area. The University of Illinois, Illinois State University and Western State University extension schools curriculum is available to students.

There are a number of people in the three counties engaged in business, practicing professions: agricultural people, industrial personnel and labor sector people who are deeply concerned and have a keen interest in quality education and specifically career education. These community resource people want to be a part of the total effort of education to help all students become familiar with the values of a work-oriented society, to integrate such values into their lives in such a way that work becomes productive, meaningful and satisfying. The integrated approach helps develop self-awareness and exploration, and career awareness beginning in the primary grades. Together they improve decision-making and planning capabilities of students before they enter the competitive labor force in the world of work.

We need a close collaboration of industry, education and labor because cooperation alone is not enough in implementing a total education program and educators agree they cannot do this by themselves. Lack of money, time and specialized personnel are a few of the main roadblocks. In his remarks at the summer commencement of The Ohio State University in August 1974, President Ford stated:

> Practical problem-solvers can contribute much to education whether or not they hold degrees. The fact of the matter is that education is being strangled - by degrees.
>
> I have asked the Secretaries of Commerce, Labor and HEW to report to me new ways to bring the world of work and institutions of education closer together. For your Government as well as you, the time has come for a fusion of the realities of a work-a-day life with the teaching of academic institutions.

The Tri-County Industry-Education-Labor Council, hereinafter called the Council, is an outgrowth of statements relating to total education may be community

decision-makers in the Tri-County area at one of the nine "Regional Hearings on Educational Goals," conducted statewide by Illinois Office of Education in 1971.

In December 1973, the state of Illinois, Office of the Secretary of State, issued a Certificate of Incorporation to the Council as provided by the "General Not for Profit Corporation Act" of Illinois. The Council also qualified and received "recognition of exemption from federal income tax," which permits donors to deduct contributions to the Council as provided under the Internal Revenue Code.

A Board of Directors numbering seventeen was elected in May 1974, nine of whom are educators. The other seven come from labor, business, industry and professions. President of the Board is Dr. Talman Van Arsdale, Jr., vice president Commercial National Bank of Peoria, who served as president of Bradley University for ten years and chancellor two years. Louis W. Hesse, president of Central Illinois Industrial Association was elected secretary and Sister Loretta McCook, Superintendent of Catholic Schools, Diocese of Peoria, Treasurer.

The Council has a Reimbursement Contractual agreement with the Research and Development Unit of the Division Vocational Technical Education Illinois Office Education which supports the service/developmental functions of the Council. Operational monies were obtained from Forest Park Foundation and Caterpillar Tractor Company on a loan-for-use agreement with interest being paid by Caterpillar and Forest Park Foundation.

Office space is provided by Illinois Central College along with other in-kind contributions. Office furniture was donated by business and industrial firms. Smaller money donations made by business and industry paid for the office equipment.

During September 1974, the Superintendent Educational Service Region for each of the three counties distributed to approximately 4,000 teachers a Council letter which informed each teacher of the services the Council was prepared to offer without cost to the schools. The following information was part of the September 16, 1974 letter:

> . . . make arrangements for community resource people to visit classrooms, discuss with students and teachers their areas of interest as related to the classroom studies whether academic or vocational in nature and the preparation for living or for making a living or for enjoying life. Take an entire class on a career visit (field trip), or set up individual student career information interviews with a qualified person. (Copy letter attached as Supplement No. 1.)

The Council developed, with the assistance of the Peoria Area Chamber of Commerce, Central Illinois Industrial Association and the Chambers of Commerce in Pekin, East Peoria, Morton, Washington, Peoria Heights and Chillicothe, a 72 page Teachers' Guide to Community Resources in the tri-county area listing

career resource speakers, career visits (field trips), individual student career occupational information resources, and other areas of interest to educators and students too numerous to mention. While the directory is not exhaustive, we feel it represents a new and valuable resource tool for educational agencies in the tri-county area.

The Council makes available to all schools, resource people to conduct career education in-service workshops and techniques for utilizing community resources. The Council brings educators, students and community resource people together on the Illinois Central College campus in seminars and informational conferences as a means of providing the link between educational agencies and the communities they serve.

In September 1975, the first issue of "Tri-County Teachers' Guide to Community Resources" was distributed to all elementary, secondary schools in the tri-county area. This guide has created additional requests from teachers.

Today our Board of Directors has a membership of twenty-one people, ten educators, three union officials, one banker, five from business-industry. President Illinois Central College plus the Metro Director of National Alliance of Businessmen (NAB) and the Director of Human Resources, City of Peoria.

Dr. Ron McCage, Coordinator Research and Development Unit, Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education, Illinois Office of Education serves as a consultant to our board and monitors the activities of our Council. His counseling and guidance accounts for a part of our success. John Washburn an associate of Dr. Ron McCage has been helpful and on several occasions served as a resource person and conducted an In-service Workshop - Career Education. Sherwood Dees, Director of Division of Vocational and Technical Education has attended a board meeting of the Council.

Knowledgeable people from business, industry, labor unions, agriculture, government, school administrators, teachers, guidance counselors, professional people, members of school boards, directors of vocational centers have had considerable input as related to the services performed by the Council. We maintain a small film library and draw on the film libraries of Illinois Office Education, Division of Vocational and Technical Education, local colleges, elementary and secondary schools, Superintendents Education Service Regions for Woodford, Tazewell, Peoria Counties.

We encourage teachers to utilize resource people with film requests. Teachers tell us students understand the content of a film much better when a resource person relates the content of a film to the everyday application of skills required to perform job occupations illustrated in the film.

We have used a low-key approach in offering our services to educators primarily to assure acceptance of a new agency. We feel that we have the world's richest resource deposit--people--and we want to make sure our

clientele of students, teachers and guidance counselors respect and value this great natural resource "knowledgeable people" willing to inform students of the best possible answers, solutions and guidance to their questions and impressions of the rugged competitive world of work. Our services must have appeal to educators and students otherwise we won't exist very long. We know business-industry-labor professions have something to offer and should be involved in the educational process for children and young people. As Dr. Chet Dugger, Director of Secondary Curriculum of Peoria Public Schools District 150 and a Council Board Member has stated many times at educational seminars:

> It is not enough for business-industry leaders to communicate their willingness to help. As parents, taxpayers, and citizens they need to communicate to school administrators and school board members that they expect to be involved.

It is my personal feeling that it is not enough for schools to teach reading, writing and arithmetic, as the old timer put it "There are two kinds of larnin' 'book larnin' and 'horse sense.' If you can git only one kind, choose 'horse sense' every time."

Before we make a new service available an ad hoc Council Task Force is appointed by the board to gather facts from educators, business-industry-professional people, and labor. Evaluate the findings and make action recommendations to the Council Board.

Starting with the 1975-76 school year we added some new services.

> Career Information Day, October 15, 1974. More than 3400 secondary students grade levels 11 and 12 were bused into Illinois Central College campus Community Service Building. Two hundred and thirty resource people from the Tri-County area made themselves available from 8:45 a.m. to 3:30 p.m. so these young people could discuss with them job occupations of 66 Career Areas plus 8 Illinois Central College Departments. Copy of Career Areas and Information/Career Information Day attached as Supplements Nos. 2 and 3. The experience was a first for most of the participants and for the 30 high schools.

Students and resource people evaluated the event and the results have not been completed. I assure you it was a most successful program.

A Career Guidance Leadership Institute is jointly being sponsored by Peoria Metro National Alliance of Businessmen, Heart of Illinois Chapter American Society for Training and Development, Illinois Central College and our Council. George Peabody College for Teachers and Dr. Ralph E. Kirkman, Editor and Professor of Higher Education are the providers. The Career Guidance Institute program is divided into two parts. CGI is designed to help educators become more familiar with the career opportunities available to graduates in the local labor market and employer requirements for entry

into these career areas. They also offer participating businessmen and women a more realistic understanding of the problems faced by educators in helping students focus on career decision making. Business-participants who are involved in the group discussions and in field visits are the principal means for providing educators with current information on career opportunities available in the private sector. NAB's experience with this program indicates that the quality of career counseling has improved in school systems whose personnel have been enrolled in CB instititutes. These improvements enable secondary students to establish more realistic career goals as they prepare for the world of work. A one day institute for decision makers in business-industry, elementary and secondary principals, and school board members will take place on December 4, 1975. The institute will use Illinois Central College facilities. The joint sponsors will issue invitations to the two hundred guests. We expect some local industry to sponsor lunch for our guests. There will be at least five speakers representing industry, Illinois Office of Education, NAB and two educators. Speakers will bring participants up-to-date in the areas of local and national trends in career education through formal course work. They will also provide opportunities for interaction between educators and employers, offer formal and informal activities designed to allow educators and employers to exchange information about career planning, up-date the participants' awareness and undertanding of the total area of career counseling. The one day institute will be followed by a 60-hour institute for teachers, counselors, administrators to take place between January and June 1976. This institute is designed to provide educators with current information about the types of careers available in the local labor market, and to prepare them to work with students in setting career goals plus on site visits to business-industry vocational centers and providing teachers and counselors the opportunity to talk with people performing jobs on a one-to-one basis. Three hours graduate credit will be earned from the 60 hour institute.

On October 15, 1975 a consortium Job Placement Information Service became a new objective. The abstract for the program is as follows:

Objectives of Project

1. Establish a Consortium Job Placement Information Service to all secondary schools in Tri-County Area (twenty-nine secondary schools).

2. Provide a single location through which a consortium of secondary schools are able to learn of available work stations with employers in Tri-County Area.

3. Increase and/or expand Work Training experiences for cooperative work study programs in secondary schools.

4. Hot-line employment information to the appointed counselor in each of the secondary schools of the consortium. Counselor to firm up with employer the employment of students grade levels 11 and 12.

5. Secure community support by Project Coordinator having personal contact with employers personnel and/or employment managers.

6. Establish basic cost factors of placement services per occupational student.

Procedures of Implementation

1. Each of the twenty-nine secondary schools will be requested to appoint a contact person or Project Coordinator to work with concerning job placement.

2. Project Coordinator and Executive Director will establish contact with representatives from industry-business, labor sector, professions, agriculture, government bodies and civic organizations to establish a cooperative work study employment program with as many employers as possible.

3. Project Coordinator will communicate with appointee of each secondary school employment opportunities for students in grade levels eleven and twelve and school representatives of each school will arrange for student employment interviews and any understanding relating to student employment.

4. Council will offer workshops for appointee relating to cooperative Work Study employment utilizing knowledgeable employment and personnel resource people from business-industry, professions, government.

5. Hot-Line telephone service to Project Coordinator for use by appointees in each school.

6. Establish a Job Placement Information Task Force to serve as an advisory counseling group to the Project Coordinator and the Council. See Appendix F for membership of Task Force.

7. Business, industry, labor and educational leaders in the area will be systematically contacted to enlist their support for the establishment of the project.

8. The same groups will be contacted to expand the number of cooperative work training agreements in the area and to enlist a pool of volunteer resources.

9. Project coordinator will work with appropriate local and state agencies to develop a placement service capability.

10. Project headquarters at ICC will become a single point of contact between education-labor-business in the area of planning.

11. Data relative to the objectives will be regularly collected and disseminated.

Contribution to Vocational and Technical Education

It represents a provocative and challenging means to broadening the gainful employment of students through the impact of industry-education-labor cooperation. Further the project will demonstrate a means of achieving greater program results in relation to funds invested through a consortium arrangement utilizing experienced personnel through the coordination of services and cooperation of local and state educational agencies, state employment service and business, industry, professional, agricultural, civic organizations, governmental employers and the labor sector in the target area.

Recently the Council arranged for Victor W. Schellschmidt, who is a member of the corporate metrication committee, Caterpillar Tractor Co., Peoria, Illinois, to meet with a Parent Teachers Association of an elementary school to discuss with the parents why metrication should be a part of every school curriculum. This same individual has conducted in-service workshops for teachers of a junior high school with two elementary schools.

The nuts and bolts of a successful Industry-Education-Labor Council can be expressed by giving you some of the Do's and Dont's that will help any Council to become successful with its services and programs.

For the Do's

. Incorporate your Council as a General Not For Profit Corporation.

. Obtain recognition of exemption from federal income tax under Section 501 (c) (3) of the Internal Revenue Code and Section 509 (a) of the code.

. Incorporators should be decision-makers from industry-business-labor who have a genuine interest in education and willing to give of their time and resources.

. Board members should represent a cross-section of business-industry-education and the labor sector. They should be working members and community opinion makers. Vocational center personnel, curriculum directors, industrial training, and development personnel, parochial school administrators, county superintendents of education, bankers, lawyers, physicians, health-group personnel, union business agents make good board members.

. Personal contacts with principals, teachers, guidance counselors is a must. The county superintendent of schools can be very helpful. Work with him and have them make contacts with educators. Also they make good board members. Our Council has three.

. Utilize every contact you have with decision-makers in your community.

- Establish sound and simple communications with resource personnel and teachers, guidance counselors and principals.

- Most businesses-industries prefer to have one contact person for the council to deal with and channel all requests for resource people through the contact person.

- Have the teacher contact the resource person by telephone and firm up all understandings between the parties.

- Follow up each assignment and get feedback from the teachers and the resource person.

- Assignments involving several resource people, such as (20) for one school contact resource people by telephone day before engagement date.

- In-service workshops require planning, therefore get the private sector people together with principal, teachers and guidance counselors and agree on a format.

- Staff personnel should attend all in-service workshops.

- Operate as a low-key agency let your services build your reputation.

- Acceptance of council's services by educators is a must, otherwise you go out of business.

- Every experience you have teaches you something that will help improve the services of the council.

- Have a third party evaluate your activities at least once a year. It's good medicine and gives you encouragement to continue your activities.

- A Teachers' Guide is a must. It must be attractive and contain valuable information. It serves as a stimulant and generates service requests.

- Before any Do's can be accomplished get a few greenbacks to defray overhead.

<u>Now the Dont's</u>

- Expect some association or agency to do your planning.

- Seek advice from someone who has had little or no contact with educators.

- Make announcements regarding services that you cannot completely deliver.

- Use amateurs to do a professional job especially in-service workshops.

- Expect every educator to be wild about your service without any cost.

- Expect every school to participate.

- Become involved in media publicity until you have proof and evidence of some success.

- Undertake an assignment you can't handle.

- Argue with an educator who hasn't accepted career education. (Prove to him it can be done successfully through other teachers and guidance counselors and he will come around to your thinking at a later date.)

- Spend too much time in the swivel chair making personal contacts.

- Expect the concept of career education to sell itself.

- Expect coordination of business-industry, labor, professional, governmental, agriculture and educators and your community leaders to fall in line and automatically accept some of the recognized facets of career education because it takes initiative and eyeball to eyeball conferences to accomplish career education objectives.

- Expect the gap between career needs and unrealistic educational programs to correct itself without motivation from experienced educational teachers, instructors and professors.

- Expect a teacher or guidance counselor who has never worked for business and industry to relate to students the skills required for job occupations of business-industry.

- Pass up employment of teachers and guidance counselors during non-teaching months. I personally consider this item to be an absolute MUST if we are sincere in what is being published and written regarding career-vocational education.

SUPPLEMENT #1

TRI - COUNTY INDUSTRY - EDUCATION - LABOR COUNCIL
P. O. Box 2400
Interim Campus Illinois Central College
East Peoria, Illinois 61611

Telephone 694-2123

September 16, 1974

The Tri-County Industry-Education-Labor Council, hereinafter referred to as the Council, is an educational, not-for-profit corporation organized under the laws of the State of Illinois. The Council offices are located in Wright Hall, Illinois Central College Interim Campus. The Council is working with Business, Industry, Government, Professions, Agriculture and Labor sectors, hereinafter referred to as "community resources sector," and Teachers, Guidance Counselors, School Administrators, Educational Service Region Superintendents within the Tri-County area, public and non-public schools.

Too often we find education being treated as a world separate from the community resources sector. The result is often evidence of a communications gap and a fragmented society. In order to understand each other fully, the community resources sector leaders and educators must talk to each other and share each other's resources.

The mission and function of the Council are to provide leadership in stimulating and coordinating collaborative relationships between the community resources sector and schools in the Tri-County area, serve as a clearinghouse of information, and make arrangements for representatives from the community resources sector to visit classrooms, discuss with students and teachers their areas of interest and answer their questions. You may wish to take an entire class on a career visit (field trip) or set up individual student career information interviews with a qualified person. These services we perform and make the necessary arrangements for you.

The Council is currently working jointly with the Peoria Association of Commerce, Central Illinois Industrial Association and the Chambers of Commerce in Pekin, East Peoria, Morton, Washington, Peoria Heights and Chillicothe to produce an information directory of classroom career information speakers, career visits (field trips), and individual student career information interviews plus other areas of interest to you and your students. While the directory will not be exhaustive, we feel it represents a new and valuable resource tool for you the teacher. This directory should be ready for distribution in late fall. We are currently surveying the community resources sector for the information that will be placed in the directory.

To teachers in the Tri-County area who answered the Peoria Association of Commerce questionnaire last May on subject matters that community resource

personnel might furnish, we are incorporating your suggested "subject matters" into the directory. We are also utilizing the fifteen Career Occupation Clusters identified by the United States Office of Education.

President Ford in an address on Friday, August 30, 1974, told members of The Ohio State University graduating class:

> Although this administration will not make promises it cannot keep, I do want to pledge one thing to you here and now: I will do everything in my power to bring education and employers together in a new climate of credibility--an atmosphere in which universities turn scholars out and employers turn them on.
>
> Ford said the Labor Department soon will announce a new program of grants to state and local governments "to provide data on occupations available and to help channel potential employees into positions which are not only personally satisfying but financially rewarding." He also said he has asked the Secretaries of Labor and of Health, Education, and Welfare to report to him on "new ways to bring the world of work and the institutions of education closer together."

The Council will make available to all schools knowledgeable educators to conduct workshops relating to career education programs and utilization of experienced personnel from the community resources sector.

The Council intends to bring educators, students and community resources sector people together on the Illinois Central College campus through seminars and informational conferences.

Meaningful career education must permit individuals to plan and prepare for careers by acquiring employable or usuable skills, whether the beginning of that career is at the completion of high school, college, university or post graduate work.

Community resources are volunteering their time and energy through field trips, individual career interviews and classroom career speakers. In so doing they have indicated a deep commitment to the education of our young people. This is indeed praiseworthy and gives credence to the growing dialogue between the Educational Community and Business, Industry, Government, Professions, Agriculture and Labor sectors. We trust you will voluntarily utilize the services of our Council.

If you so desire, you may obtain your community resource people yourself or contact your local chamber of commerce for their assistance.

Until we are able to assemble, print and distribute the directory, we want you to know our Council is ready even now to make many community

resources available to you. Make your needs known to our Council personnel. We can make the necessary arrangements or arrange for you to firm up your request directly with the resource person. We want you to have the best information available in the Tri-County area for your students.

TO OBTAIN COMMUNITY RESOURCES CALL TRI-COUNTY INDUSTRY-EDUCATION-LABOR COUNCIL 694-2123.

9/16/74

T. W. Van Arsdale

T. W. Van Arsdale, President

CAREER AREAS
CAREER INFORMATION DAY

October 15, 1975

1. Accountant/Bookkeeper
2. Secretary
3. Legal Secretary
4. Medical Records - Clerk - Stenographer
5. Farm Manager
6. Agricultural Supplies & Service
7. Agricultural Mechanic
8. Heavy Equipment Operator
9. Machinist
10. Carpenter/Cabinetmaker
11. Electrician
12. Welder
13. Sheet Metal Workers
14. Iron Workers
15. Concrete & Cement Workers
16. Architect
17. Professional Engineers
18. Refrigeration/Air Conditioning Repair
19. Electronics Technician/ Repairman
20. Pharmacist
21. Drafting
22. Real Estate Agent
23. Mortuary Science
24. Physician
25. Artist/Musician
26. Air Transportation
27. Aircraft Mechanic/Metal Work
28. Armed Forces
29. Lawyer
30. Food Service
31. Law Enforcement
32. Social Worker
33. Teacher/Teacher's Aide
34. Journalist
35. Athletics & Recreation
36. Horticulturalist/Landscape Architect
37. Banking & Finance
38. Nurse
39. Medical Technician
40. Therapist (Physical & Occupational)
41. Day Care Occupations
42. Dietician
43. Business Administration
44. Environmental Careers
45. Cosmetology & Barbering
46. Dentistry (Hygienist-Assistant-Lab Technician)
47. Data Processing
48. Insurance Occupations
49. Sanitation Workers
50. Meat Cutter
51. Hotel-Motel Management Occupations
52. Photographer
53. Veterinarian/Animal Care
54. X-Ray Technologist
55. Transportation/Truck Driving
56. Graphic Arts
57. Advertising
58. Sales Clerk - Retail
59. Sales Person - Outside
60. Dressmaking
61. Fire Science Tech
62. Auto Body Repairman
63. Auto Mechanic
64. Industrial Apprenticeships/ Training Programs
65. Building & Construction
66. Speech & Hearing

ILLINOIS CENTRAL COLLEGE
DEPARTMENTS

1. Engineering & Industrial Occupations
2. Communications
3. Creative Arts
4. Health Occupations
5. Social Science
6. Agriculture & Applied Life Sciences
7. Business Occupations
8. Mathematics and Science

CAREER INFORMATION DAY

INFORMATION

How Career Information Day Developed

A questionnaire survey was sent to each of the 29 public, non-public and private schools in the Tri-County area in November 1974. Twenty-three high schools out of the twenty-nine indicated an interest in the development of a Career Information Day.

Planning Committee

All of the planning for Career Information Day has been done by a sub-committee made up of educators who are actively engaged in high school teaching and/or counseling. A copy of the committee membership list is included.

The Purpose of Career Information Day

To provide students the opportunity of discussing with knowledgeable resource people job occupations or a profession in which the student has an interest. Also to provide information that may help a student in selecting a career and the required skills, education and personal traits deemed essential for a specific career.

How Career Information Day Will Operate

Students will enter the gymnasium (Community Service Building) on the west side of the building. (Tennis courts are located east of the gym.) Lobby area is separated from main gym area by a wall that has two entrance openings. Located in lobby will be information, emergency, first aid tables and a snack counter. Resource people will be located in the main gym area. Each career area will be identified by a sign with a large lettering fastened to a pedestal that is approximately 5 feet above table top. Resource people will be furnished folding chairs and will be on one side of tables 30" wide x 8' long, covered with a white cover. Students will select which career areas they wish to contact and walk up to the career area table and engage the Resource People in conversation concerning a job occupation or profession in which they have an interest and wish to explore with a knowledgeable person. The amount of time a resource person will be able to give to an individual student will be governed primarily by the number of students waiting to talk to a resource person. Resource people will determine the length of time that can be given to each student with whom they have conversation. Students should recognize when other students are waiting to talk to the same Resource Person and not monopolize the situation. Resource people will be available from 9:00 a.m. to 3:30 p.m. Some career areas will be manned by resource people who will only be available during the morning hours with different resource people being available during the afternoon hours.

Unloading and Loading Buses

Buses are to discharge students at the area located in Parking Lot B marked on the Campus Map. Buses should enter Lot B at the last entrace nearest to the Tennis Courts. I.C.C. will post signs for Career Day Buses to follow for unloading and boarding buses. After a bus is unloaded the bus driver is to proceed to parking area reserved for Career Day Buses located on Interim Campus as indicated on Campus Map. Boarding buses is at the same location as unloading. I.C.C. Public Safety personnel will be available to assist bus drivers.

Who Are the Resource People?

They are individuals from the Tri-County area plus people from other parts of Illinois who are well-qualified and knowledgeable regarding the job occupations or any profession for the 67 Career Areas (hundreds of job occupations make up a career area).

Homework for Students Prior to Attending Career Information Day

Students should be informed prior to October 15 by teachers and counselors how to carry on a conversation and obtain the information the student wants relating to a specific job occupation and/or profession. Students should be made aware they may contact as many career areas as their time will permit. They should not hesitate to ask questions that will give them the information they personally want. There is no set format or group of questions that can be utilized by every student to extract from the resource person the information the individual student desires. Encourage students to contact at least three career areas and/or I.C.C. Departments.

Students should be prepared to ask questions relating to training required to develop skills needed for a job occupation or profession. If a person starts a career at any entry level job to what other jobs can that person be promoted. Base hourly rate and/or salary for entry level jobs and base hourly rate and/or salaries that can be earned upon promotion later in his career. Amount of training required and where does a student get the necessary training while in high school, community college, four year college, professional school industrial training on the job technical schools and/or apprenticeship training.

Tours of I.C.C. Campus and Faculty

Any student who wants to make a 30 minute tour of Illinois Central College Campus should go to the lobby area of the Library-Administration Building. The building is located on the permanent campus at I.C.C. Tours will be available at 9:30, 10:30, 11:30 a.m. and 12:30 and 1:30 p.m.

Evaluation Form (Students)

Each school will be supplied with the necessary copies of an evaluation form for each student to complete. The completion of the evaluation form may be done while in the Community Service Building or while returning by bus to home base. A large brown mailing envelope is being furnished to mail evaluation forms to Planning Committee.

Evaluation Form (Resource People)

To properly evaluate Career Information Day each resource person will be given an opportunity to complete a questionnaire.

Rest Rooms

Restrooms are located to your right as you enter the lobby area of the Gymnasium.

Snack Counter

I.C.C. Cafeteria personnel will sell cold sandwiches and pop in the lobby of the Gymnasium 11:30 a.m. to 1:00 p.m. Students, teachers and resource people may purchase food in the I.C.C. Cafeteria located in Building 1, Main Campus, near book store area. Ask any I.C.C. student for directions to the Cafeteria.

Electrical Outlets

There are a limited number of outlets which may be used by resource people who wish to use visual aides without sound.

Information Pamphlets, Brochures, etc.

Resource people may give to students any kind of information pamphlets, brochures, etc. they wish to distribute.

Hospitality Room

Room PE-02 in the Gymnasium is reserved for use by resource persons and teachers in charge of a group of students who are attending Career Information Day. No student will be permitted to enter this room. Coffeee and donuts will be available during the morning hours and coffee in the afternoon.

Community Service Building Area

There are 29, 144 square feet of space, which will be utilized for Career Information Day.

News Releases and Public Relations

News releases and contact with the communications media are being handled by Douglas E. Wells, Jr., Director School and Community Relations, Peoria Public Schools, District 150.

The Planning Committee encourages you to talk about Career Information Day through your school paper.

Identification Badges

Each school will be supplied with sufficient number of identification badges to which each student may add his name and the name of his school.

Military Services of the United States

All branches of the military services have been invited through John J. Tourish, Jr., First Sergeant of Marines, who has agreed to coordinate the participation of all branches of the military to participate in Career Information Day.

Illinois Central College

Without the cooperation of I.C.C. Personnel, Career Information Day would not be possible. Recognition must be given to the splendid cooperation and help the Council personnel and planning committee has received from many of the administrators, faculty members, public safety, graphic arts, engineering and industrial occupations to mention a few.

Resource People

Approximately 200 resource people will be participating in Career Information Day. The community businesses, industries, agricultural, professional and labor sector people have volunteered their time and energy. In so doing they have indicated a deep commitment to the education of our young people. This is indeed praiseworthy and gives credence to the growing dialogue between the educational community and business/industry and labor.

Visual Aids

Visual Aids may be used by resource people so long as there is no audio. The area in which the program will take place is the large gymnasium and the accoustics are not sufficient to permit audio to be used with visual aids.

Identification Badges for Resource People

You are entitled to wear any type of identification badge.

Brochures and Literature

You may hand out any type of materials you feel will be beneficial to the students.

High Schools Participating

Twenty-nine high schools will be sending students to the Career Information Day.

Number of Students Expected on Career Information Day

Approximately 3,000 students will attend Career Information Day. Each high school has been designated a specific time for their students to arrive at the Community Service Building. On an average each high school will permit their students to remain on I.C.C. Campus a minimum of two hours.

An Analysis of the Communication Process in Industry-Education-Labor Cooperative Program Development

by Claude P. Duet*

Communication can be defined as "an exchange of thoughts or ideas through some medium" (Morris, 1973). The development and maintenance of a system for that exchange is obviously an essential element in the success of any industry-education-labor cooperative program. In order to design such a system so that it will be effective in facilitating communication, the members of the cooperative program must consider several important factors, some particular to the nature of the institutions involved and others relating more generally to the process of communication.

A basic description of any communication can be stated as "who says what to whom by what channel to what effect." As such the communication process includes four major process elements; these elements can be identified as resource, user system, message, and medium (Havelock, 1969). In industry-education-labor cooperation the resource and user system are those institutions participating in the program. According to the direction of the message, each organization may be acting in each of these roles at various times. The message communicated by the parties involved and its effect upon program development is contingent upon several considerations related to the substance of the message and the nature of the medium.

As an initial consideration influencing the substance of the message, each party planning to enter into cooperative program development must have some accurate knowledge of the goals and structure of the other organizations and/or institutions participating in the program. More specifically, many of the factors which prompt or hinder cooperation between schools and external agencies are related to the variant goals and to the inherent differences in the administrative structures of the organizations.

A second concern which is also related to the substance of the message is the necessity of each party being knowledgeable about any specialized vocabulary important to the operations of the other party. In terms of industry-education-labor cooperation this concern should lead to an examination and study of any professional vocabulary indigenous to each institution, which would improve efforts of communication.

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*Claude P. Duet is an assistant professor of education at The University of New Orleans, Lake Front, New Orleans, Louisiana.

A third element influencing the effect of a message on cooperative program development is an efficient and effective medium, the presence of which will permit a distortion-free transmission between participating parties. An analysis of each of these factors is crucial to an understanding of the communication process in I-E-L cooperation. As a starting point to this understanding, some review of the major goals of each organization would be in order.

Organizational Goals and Structure

Probably the best statement of the overall goal of an American educational institution is optimal individual development and attainment of social competence for all members of the society (Good, 1973). In order to achieve such a goal the education institution in this country has recognized the need for an attempted to develop a system made up of two basic components. The first is a general component which is designed to equip an individual to perform undefined functions, of positive value in society, in unpredictable situations. The second component of education, often called training, is the process of preparing an individual to perform defined functions in a predictable situation (Johnson, 1967). Both components contribute to more specific objectives such as those delineated by national commissions and commonly accepted by society. For example, The Educational Policies Commission (1938) stated the intended outcomes of schools as (1) self-realization, (2) human development, (3) economic efficiency, and (4) civic responsibility.

Industry, which is concerned with the commercial production and sale of goods and services, obviously has as major goals the actual production of these goods and services and the making of a profit on their sale so that an appropriate distribution of that profit can be made to those sources which contributed to the production process. Other than this obvious goal of the industrial sector of our society, industry recently has turned its attentions to social concerns and problems and the effects these have on its overall goals. Organized labor can be described as an organization of wage earners formed for the goal of serving their class interests with respect to wages and working conditions (Morris, 1973).

The most conspicuous instance of parallel interests of these institutions manifests itself in the economic efficiency objectives of American schooling and the need of industry for trained personnel to most effectively assist in the production and sale of goods and services with the minimum amount of job training possible, while labor must have access to students who are prepared for the development of professional skills. In this respect, students who are economically efficient would be those who are vocationally competent and can step into the world of work or an apprenticeship training program from the school. The ease with which that transition takes place may well be an indicator of the extent to which the school is achieving one of its major objectives. Thus this commonality of intention and need provides an obvious focus for communicating, thereby increasing the chances that an exchange of ideas can be effected by the cooperating parties.

As previously mentioned, industry has shown increased interest in the impact social issues and problems have on its operations. Labor also must be concerned with the effects such problems will have on its membership. The school's objectives of civic responsibility, self-realization and human development touch on these issues. These examples of the objectives of schooling do not provide clear-cut goals for cooperative endeavors as does the example of vocational development, but they certainly are worthy of examination. Industry and labor are parts of the public served by products of the educational institution and therefore have a vested interest in the development of that product. Each area of study (course) in the school program contributes to the students' growth. The course content selected for inclusion in the school's curriculum must be selected for its value in achieving the intended objectives. Thus industry and labor, much like government, the university, and others, have significant reason to participate in the process of curriculum development, not exclusively in vocational areas, but in other areas of study like mathematics, history, and English where the student assimilates knowledge and develops cognitive skills which he will use daily at work as well as in other spheres of human activity. By influencing the school's efforts in areas other than those directly related to vocational development, industry and labor will in the long run, influence social problems and concerns that are directly relevant to the environment in which they participate.

In summary, there are commonalities between goals of education and those of labor and industry, the primary instance of which is the concern for vocational development. Other common areas of concern exist but do not offer the primary motivating force for cooperation which vocational concerns do. These other areas represent an untapped potential for future communications regarding cooperative efforts. For example, selecting and structuring course content have received minimal attention in the cooperative program development process. Generally, research on high school cooperative programs in the state of Louisiana by Duet and Newfield (1975) and an examination of case studies of cooperative programs (Burt, 1970; Mendez, 1974) substantiate the fact that for the most part curriculum development, except for vocational courses, has been the exclusive domain of the educational and academic professions with little direct involvement of the public or private enterprise sector.

In addition to examining organizational goals, an analysis of the communication process must consider the basic structures of the organizations engaged in cooperative program development. There are crucial differences in the structure of an industry or labor organization and that of the public school. The school has been referred to as a "domesticated" organization, one with a guaranteed existence and minimal competition for clients, thereby reducing survival struggles almost to nil (Carlson, 1965). On the other hand, industry and labor organizations must continually struggle for their very existence. Such organizations are referred to as "wild" organizations and the support of the clients upon which their very survival is based depends upon the quality of their products. The quality of the school's product is of such an undetermined nature in terms of the school's performance that the school is most often not concerned with the marketability of that product.

The school's survival is not dependent in the short run on its output; hence, the school is much slower than industry or labor in responding to changing needs of the environment external to the institution (Hansen and Oritz, 1975). While industry's very existence may depend upon the effectiveness of its management information system, such a system has only a token existence in a school system. Communication, particularly from an external source, is difficult to achieve should the external agent have expectations of encountering a management information system which parallels that of industry. Industry must respond quickly to changes which affect the production or selling of products or services. Industry also has to be more concerned with the whole concept of accountability and the relationship of input and output. Decisions made by industrial concerns must be supported by evidence and internal communications are an expected factor.

Labor is another organization which must provide well trained personnel to the industrial and services sectors of society. Its organization however is inherently different from those of industry and education in that it is primarily a democratic organization, most answerable to the membership as a whole. Therefore decision making tends to take more time as full participation is desired. In any instance of cooperative effort if any of the parties does not recognize the expectations that result from the differing modes of organizational structures, the communication process is going to be strained.

Another element which must be considered in developing communications is the existence of any specialized vocabulary necessary to effectively communicate with members of the cooperating organizations. Education, much like other social sciences, has a somewhat specialized vocabulary. Often seen by people external to education as a manufactured system designed to befuddle those who are not members, this vocabulary does serve useful purposes in the production and dissemination of knowledge about the various disciplines within the field of education, and in clarifying the various roles of those who work in the school systems. The vocabulary of education defines the discipline and structures the problems in the field. Therefore in any cooperative endeavor if one party wants to have a specialized influence or effect it is necessary to understand very specific language of the system to be affected. For example, if industry or labor has no definitive goals in terms of intended students' behaviors in mind, cooperation should be directed to supportive assistance in the areas of instructional supplies, financial support for extracurricula activities, etc. However, should the motivations of industry or labor in initiating or working in a cooperative arrangement be related to affecting particular learning outcomes, then curriculum development should be the focus of attention. A specific instance is the desire of labor to have content on labor unions, the trade union movement and economic education incorporated in the social science curriculum of the schools (Mendez, 1975). The point of departure for inclusion of such content is the examination of the present social science curriculum and appropriate revision in a cooperative endeavor. Areas other than curriculum and instruction which would be amendable to specialized cooperation would include administration and management of schools and the guidance programs.

The Communication Medium in Cooperative Programs

The last communication process element to be considered in developing industry-education-labor cooperation is the medium through which thoughts or ideas are exchanged. This medium is perhaps the most crucial element in the effecting of exchanges which will in fact lead to cooperation. Educators, as extensive research has demonstrated, depend primarily on interpersonal modes of communication. It could be expected that representatives of business, industry, and labor, who are members of a practical profession, also depend upon interpersonal modes of communication. For these reasons the most effective medium for communication in cooperative program development would involve face-to-face communication.

There are several alternatives in the selection of the medium for cooperative programs. One choice might be an industry or labor person who has demonstrated an interest in education and who is committed to the improvement of the school system through partnership programs. Another might be a school person who has a vocational or some business background and who is also interested in partnership arrangement for improving education. The most obvious weakness of both of these choices is the fact that institutional loyalities do not vanish in a cooperative program (Grupe, 1971). Therefore the interests of the medium could be continually under the suspicions of the institution of which the medium is not a member, seriously hampering his effectiveness.

A third alternative is the selection or development of an external medium to handle the communicating. This external medium could be a person far removed from the actual institutions cooperating. For example, much of the success in initiating the Distributive Education (DE) programs in Louisiana can be attributed to the actions of state department of education officials who are not members of the cooperating school systems and whose loyalty is to the program. They sell the program and assist the cooperating bodies in establishing local councils to oversee the program. Thus this external agent serves as an effective medium in stimulating cooperative program development. Mendez (1975) has encouraged and directed actions to appoint coordinators at regional, state, and local levels to perform just this kind of service.

Another option for medium is the council or committee made up of representatives from the cooperating parties. Burt (1967) has well documented the usefulness and organization of such councils for vocational cooperative programs. The Action Foundation concept supported by the Chambers of Commerce is another variation on this idea (Mendez, 1974).

In addition to the previously mentioned factors affecting cooperative program communication, the actual operation of the medium could be structured and analyzed using the unifying themes which Havelock (1969) discovered in the literature dealing with information dissemination. Specifically the medium's operations can be organized and evaluated in terms of (1) linkage (actual interaction), (2) structure (degree of organization and coordination), (3) openness (utilizes flexible strategies), (4) capacity (capability to

marshall and use diverse resources), (5) reward (can convey feedback and reinforcement), (6) proximity (nearness in time and place), and (7) synergy (number and diversity, continuity and persistence in transmission).

Assimilating all of the knowledge we now have on the roles and varied types of mediums, the ideal medium for cooperative programs would be one which involves human interaction and is thoroughly knowledgeable about the goals and structures of industry, education, and labor. That medium should have control over vocabularies employed by all three institutions and should have maximum opportunity for interaction with them and demonstrated ability to draw upon different modes of interacting. If the medium is an individual, his position should be an assigned job with a specific job description and supportive staff, at the same time allowed to operate as a free agent not under direct control of participating organizations. There must be some guarantee that the job will continue. He should have access to numerous contacts in various institutions, including resource institutions like the university, government, and professional organizations. He must be in a respected position in that he can give consistent meaningful rewards to the participants and he must be easily accessible to the involved parties in terms of time and space.

Further Recommendations

In the process of developing an I-E-L cooperative program specific attention should be given to the communication component. In addition to all of the previous considerations mentioned concerning the nature and organization of the system of communication, the following recommendations seem in order.

1. Because of the considerations related to the possibility of co-opting participants and the advantages of having a third party mediator, members of professional associations should consider instructing their leadership to assume an active role in the communication process of cooperative program development. Establishing a visible component within these associations and staffing this component with personnel knowledgeable about the goals, structure, and vocabulary of industry, education, and labor would provide valuable assistance to presently existing structures such as the councils and other mediums.

2. There is a real need for the development of tools for the examination of cooperative programs. While obviously there are many instances of cooperation, there is no framework for describing and comparing these examples. A classification system of cooperative programs is needed. Such a system would not only provide information relative to the extent of existing cooperation but could also suggest or stimulate other levels of cooperation.

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section four:

The Development of Human Resources

A Program for Improving the Quality of Working Life

by Nicholas Bizony*

It has been occuring to me all day that this is the first time I have been in Ohaha in ten years; ten years ago when I was here it was the first time I had ever been in Omaha, and that was an extremely brief visit. It was 1966 and it was about 3 a.m.; I was in the back of a pickup truck, asleep, racing through the streets. You can well imagine that I am getting a little more exposure to the place now than on that particular occasion. We had started out, a friend and I, to come and work in Iowa doing some farming for the summer; we had to be in Iowa on a deadline date but we decided to go by way of the Grand Canyon. We were traveling in a pickup truck and he'd drive and I'd sleep in the back under a pile of sleeping bags and then I'd drive for a while and he'd sleep. We got down in the bottom of the Grand Canyon and somebody (I forget whether it was he or I, that's the sort of trip it was) said, "my God, man, we gotta be in Des Moines in a day and a half and here we are in Flagstaff" so we came running up out of the Grand Canyon as fast as we could and hopped into the pickup truck and I think we made it from Flagstaff to Des Moines in 18 or 19 hours which may be a record. We fortunately didn't get to check with the highway patrol on whether it was or not. It was in the course of that rapid portion of the trip that I came through Omaha at 3 a.m. under a pile of blankets. Coming in last night on United Airlines and cabbing to the Omaha Hilton to spend my night in a room on the 11th floor and then talk with a group of educators provides a little different perspective than I had the last time I was here. Its kind of comforting to be in Omaha, sitting in the heartland, you get a real feeling of security being in the middle of all that food.

I have noticed that to talk to a group of people after dinner and particularly talking to a group that has been engaging in a hospitality hour or whatever the current euphemism is for standing around and drinking for a while, talking to a group like that tends to be a totally different proposition from talking to the same group at 9:30 in the morning. As we say in the field, "task orientation" tends to be considerably diminished. That's not a bad thing, by the way; I think that all of us spend too much time during

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most of our days in situations that are so task-focused that we fail to take in a lot of the things that are going on around us that we shouldn't miss. So I'm not at all adverse to a group who sits here and doesn't particularly want to learn anything from what I have to say. Coupled with my inside knowledge that there is nothing in what I'm going to say that you have to learn from, that makes a nice combination. What that all boils down to is if you don't take notes you aren't going to miss any major bibliographic references.

But given the assumption that none of us here are into putting out or absorbing heavy content at this point, what I would like to do is to tell you a story and see if maybe at the end of it we could just sneak in a reference or two to educational and vocational tie-ins.

I want to tell you about how my organization got where it got and where it came from. And to do that I have to introduce someone to you who isn't here tonight. He was almost here and he wanted to be here and if he had been here he would have told you the story that I'm going to tell you. That fellow's name is Ted Mills and he is the man that I work with and the person who created the Center that I am now a part of. He, unfortunately, had an unavoidable conflict and he asked me to tell you he was sorry about that and also asked me to fill in. I don't know whether any of you have been exposed to the wisdom of Ted Mills wherever and however it may have been delivered, but if you have, you know that it's no easy task to be a substitute.

The reason I mentioned Ted, aside from the fact that he would have been here tonight, is that the story that I would like to share with you is one that involves him pretty extensively.

To get into that I have to take you back to 1970, to the south of France, which is not a bad place to go right now; if you're going to go somewhere you might as well go to the south of France. In the south of France, in 1970, about 20 miles outside of Nice, we find Ted Mills, age 55, married for some years to a French woman, having retired from the communications industry. He had decided that the south of France might be a quieter place than New York, and that one could do things like remodel a farm house and maybe write a book or grow some grapes. The kinds of things that were very tough to do in midtown Manhattan. In fact, virtually nobody in midtown Manhattan does those kinds of things.

There is Ted Mills in the midst of this quiet and solitude in the south of France and he gets a phone call from Washington. The man on the line was a friend of his whom he had known for some years, a fellow by the name of Jack Grayson. Some of you may remember him by his more official title, C. Jackson Grayson, III. He is now the Dean of the Business School at Southern Methodist University. The reason that Grayson was calling Ted in France was to say that Grayson had just been made Chairman of the Price Commission and he could definitely use some help.

The Price Commission in the dark days of 1970 and 1971 was designed to control prices in that post-recession-newly-inflationary period that was then believed to be the worst thing that had ever happened to the economy. Apparently Grayson had been called and asked "How would you like to be Chairman of the Price Commission?" and, Grayson being a man who had had a long standing and very deep interest in the economy said he would take it, hoping he could do something with it. Now there hadn't been a Price Commission since World War II, and you can well appreciate that in Grayson's mind (and, he was hoping, in the minds of most of us) that this was not World War II. I mean, frankly, conditions were not as dire and as economically perilous as they had been in World War II, and the kinds of problems and the kinds of remedies that might be appropriate were not at all those of World War II. But there was absolutely no history of an organization that was designed to control prices unless you went back 30 years. And there was virtually nobody left or at least nobody that the government chose to listen to left from the days of the Office of Price Administration in the 40's. That's why the phone call came into France; Grayson was saying to Ted "why don't you leave your quiet seclusion there in France and come back for just maybe three or four months, no more than six months, on a consultant basis and help me get this thing off the ground?" Well, Ted felt that was reasonable as long as it was interim and temporary, and besides it would be exciting to be in that kind of thing and maybe there was really a mandate to do something, so he came back on a temporary basis in 1970 and he has been here ever since.

What happened when he got here was that he found a group of people who were told to put together what would function as a lid on an economy that originally was not meant to have a lid. What is the purpose of the Price Commission? We are supposed to have an economy here that is self-regulating, neat supply and demand curves intersecting, and all those things you remember from business administration and economics. You don't have to have artificial entities to control prices that the great invisible hand is supposed to be controlling for us. Enlightened self-interest is supposed to be the thing that works. So what is this entity, why are we finding ourselves involved in something that doesn't seem to fit with all the things we all learned about in history books?

Grayson and others had for a long time thought that productivity was the answer to a lot of our economic problems. In the economists' sense, productivity is units of output over units of input; the units of output are the automobiles or brooms or services that you produce, and the units of input are the capital assets or the labor, the human beings, that are involved in the endeavor. Well productivity, measured that way, had for about 10 years been declining in the United States and a lot of people, at least a lot of people in the economic world, had been quite concerned about this trend. Lots of theories had begun to generate about why it was happening.

Again, it was a situation of people being faced with something that was contrary to the American dream. For generations we had been the most productive, the richest, the most powerful nation on earth and here we are looking at a declining rate of productivity that went back at least 10 years and put

this country on a productivity index somewhere around 17th or 18th in the list of industrial nations. That is a shocking thing for a lot of Americans to think about, particularly the Americans that are involved with business and who would be most sensitive to the activities of a Price Commission. OK; if you buy the premise that if we could increase the ratio of units-of-output-per-units-of-input we could get the goods and services that we all consume cheaper, then we've got a basic weapon against inflation. Now, if you go with that, then you ask the next question: what is standing in the way of achieving increased productivity? Now this is where the programs that I want to tell you about got started.

One of the things Mills and Grayson fastened on was the tone and tenor of the labor-management relationship in the U.S. Labor and management dealt with each other across the collective bargaining table. When you deal across the collective bargaining table the thing you are interested in is "how big a piece of the pie do I get?" The pie is only so big; we all know when we sit down that we want the biggest piece we can get and that means that the other party gets the smallest piece that we can conceivably wheel and deal him into taking. There is certainly every justification, historically and sociologically and every other way, for the adversary labor-management relationship in the area of the dollar. The dollar has been the thing that everybody clings to the tightest, and if you are a worker there is no way other than organizing and achieving a strength in numbers position that you are going to wage an effective fight over the dollar. So please don't read this as an indictment of the collective bargaining system in the areas that the collective bargaining system ought to deal with. The problem was that labor and management had gotten locked into this system and it was the only way they ever talked to each other. No matter what the issue was. You could be discussing the color of toilet paper in the men's room and it had to be dealt with at the collective bargaining table. It appeared there was an unremitting atmosphere of adversary, hostile, I-win-you-lose kind of interaction.

Now the premise that Grayson and Mills developed out of that was that if you could somehow defuse that, de-escalate it, get into something that was not quite win-lose but maybe something that worked in a different way, you could then address yourself to all sorts of issues that centered around work, work in America or work in the world, and how that work is done and in what kinds of organizations that work is done. If you could, in a cooperative way, address issues that centered on the <u>way</u> people work and what it is they are doing at work it was possible that some kinds of mutually beneficial results would come about. That's a win-win situation as opposed to a win-lose situation. I ask you to remember that in 1970 when this was being discussed in terms of the economy and in the context of what could be done about inflation, it was pretty revolutionary. At that point the only people that had talked about win-win as opposed to win-lose were psychologists, group therapists, people who had dealt with human beings, but virtually nobody who had dealt with institutions.

If you are with me so far then you've heard an argument for a cooperative relationship. Let me make it a little more specific. The suggestion was

to get labor and management to do something together. This poses a real problem. You've got fundamentally different institutions. As Claude Duet said this morning, when you have fundamentally different institutions you've got to find some goals that those institutions can share before they are going to do anything together. There is no reason for them to do anything if they don't think that they've got some motivation, some incentive that relates to who they are and what they are.

Productivity had been the focus of the discussion up to this point. It now began to shift. Productivity is a notoriously management word. With very good reason, dating back at least to Frederick Taylor in the 1890's and early 1900's and probably dating all the way back to the beginnings of the industrial revolution, productivity had been seen by labor as management's term for all sorts of things that meant nothing but bad news for the workers. It typically meant speed-up; that means doing more work with no more pay. It means layoff; doing the same amount of work or more work with fewer people. It means automation which might in turn mean both speed up and layoff. It appeared that there wasn't going to be any way to talk about productivity in a positive, meaningful sense to labor; if the goal was to get labor and management to do something together, there had to be another way of approaching the problem.

At this point, it was discovered that there had for some time been scattered efforts in various activities that have since become collectively known as "the quality of work life." Improving quality of working life really means making the work itself and the place in which the work is done work for everybody in it, and when I say everybody I include both workers and management. If you can really fundamentally get at the quality of working life, if you can really fundamentally make some changes that stem from the expertise of the people in the work place, the people who do the work then, so the hypothesis ran, you would get two things: you would get both a more effective organization on the one hand, and you would get an improved quality of working life on the other. An improve quality of life at work for the people who work in the organization. And that's all the way up and down the line. That's a win-win situation. The mission then, was to somehow implement demonstrations of the fact that this is indeed an effort from which both sides benefit.

I mentioned that what we had started out with was productivity in the economists sense; productivity in the economists sense is units-of-output-produced-per-units-of-input. That is a very limited kind of thing. I think you may begin to get some feeling that the focus on productivity in itself as the basic weapon against inflation had by now become only one aspect of a program that was rapidly broadening in scope. With all this thinking that I have laboriously run down for you here as background, Ted Mills formed what he called the Quality of Work Program in the Price Commission. What the Program was designed to do was to find ways to get labor and management together in specific workplaces, specific identified sites throughout the country, to focus on the work and the environment in which the work takes place, and to jointly, cooperatively, make some badly needed changes.

At this point a fellow from the University of Michigan arrived on the scene. There is an organization at the University of Michigan known as the Institute for Social Research which had for 20-odd years been involved, in one way or another, in looking at behavior in organizations and the behavior of organizations, and how the two things contribute one to the other. That gentleman said, "I am in total sympathy with what appears to be an effort to create a new way of working, but I think that if you don't measure it, you're going to be whistling in the dark because what you will do is create some experiments in isolated places around the country that will be perhaps of great benefit to the local participants, but nobody will ever remember how it was achieved and it will all fade into the dust in a couple of years. If, on the other hand, we measure it, if we find some way to take a reliable and creditable and impartial measurement of what happens, then we have a good chance of letting people know what the results of working cooperatively as opposed to adversarily can be."

Now, the Price Commission was then still in existence, Jack Grayson still had enough power and influence there to devote some funding to experimental projects and to the beginning of research on ways to evaluate these experiments. Now we come to about late 1972 and we suddenly find Jack Grayson spirited out of town in the dark of night. If you remember 1972 lots of things were going on in the dark of night, especially in Washington. What really happened, I think, was that Grayson was in fact putting controls on prices and that turned out to be not politically palatable and the result was his rapid and little-publicized departure at about the same time the Price Commission itself was pretty well emasculated; it occurred to me that that is probably a chauvenist term and I don't dare say that kind of thing in this group so I'll say instead that the Price Commission was de-escalated. You remember now that these were the days of Phase I, which was followed close on its heels by Phase II, and then there was the memorable Phase II-1/2 and I think that we even got to Phase II-3/4; they were cutting up phases into segments that nobody ever knew existed before. In any event, as part of that process the Price Commission lost its mandate to do what it was set up to do. So there sits the Quality of Work Program with no place to go, potentially no supporters, and no way to continue to exist as a government program. Ted did manage to find a way to hopscotch it around for another year-and-a-half; it went to the Cost of Living Council which was in some sense the successor to the Price Commission and it went from the Cost of Living Council to the National Commission on Productivity.

During that period of hopscotching from agency to agency to maintain an umbrella to keep himself and the program alive, Mills managed to start and fund a couple of demonstration projects, one of which was in a company called Harman International which I will get back to momentarily because that is one of the places where some things happened that tie directly into what your concerns are here.

It became apparent at about this time (early 1973) that this was not a good time to be a government program, particularly if you were walking in and trying to tell businessmen and labor leaders that they ought to do something cooperatively which was totally unheard of in the world anyway. What you

were talking about was so strange generally to the people that you were trying to reach that the last thing they needed was to see someone come in with a government sweatshirt on talking about labor-management cooperation. "You must be talking about socialism, why the next step is nationalization of all of industry." So it became very hard to communicate with people.

As a result Ted started looking around for ways to keep the Program alive in the private sector and he found that there was in fact Ford Foundation support and support by way of a grant from the Department of Commerce. We now have the National Quality of Work Center operating in the private sector.

What we do is to go around covering as broad a range of workplaces as we can, and convince labor, if we can, and management, if we can, that they ought to do something cooperatively. The way to do that is to form a committee in a particular location in the organization in which people can do things cooperatively and in which you've got roughly equal representation from labor and management. The mandate is to take a look at the workplace and what goes on there, who it's done by and why. I must point out here that you have got to be very careful not to step on collective bargaining toes. That's a whole story in itself and it's at least an evening's worth of talk which I won't get into here except to say that you have got to stay away from the various collective bargaining sensibilities that exist in particular situations. Even aside from the issues within normal collective bargaining scope, however, we have a whole host of things that can be looked at in the workplace and perhaps productively addressed by listening to the people who do the work.

The Center operates only in unionized work places; the reason for this is that a lot of what people sometimes mistake for the kind of activity that I am describing to you has been done under names like job enrichment, job enlargement, open systems, participative management, you name it, the list goes on at least as long as your arm. But a lot of those activities had been undertaken by managements in places where there were no unions and in places where unions were attempting to get themselves certified as representatives of the workforce, and undertaken specifically for the purpose of keeping a union out. Our assumption was, then, that if we invariably do what we do in organized work places where the union is an equal partner it should be, I think, fairly self-evident that we are not shills for management in any way.

We are called by lots of names. We are called third-party, we are called facilitators, we are called interventionists, we are called consultants, we are called any variety of things. The key point, I think, is the third party function. It appears that labor and management generally will not get together and do these kinds of things on their own. Somebody has to come in and it looks like in the labor/management situation, pretty generally, it's got to be somebody from outside either labor or management.

I imagine most of you have worked with committees or against committees or around committees and you know that you don't just put a bunch of people

together in a room and say, "all right, here's your task, go to it." A group does not function as a team without some kind of help, without some process that allows it to get to team function. Particularly groups in situations like the ones we are dealing with in which people have hitherto seen each other as enemies. You cannot put a committee together comprised of people representative of those kinds of groups and expect them to sit down and tomorrow be producing lovely decisions about how to change the world of work. So, having convinced labor and management to create a joint committee, we provide them with a person or persons who can facilitate group development, team building.

You probably know as well as I do if not better that people who do these kinds of things come out of all sorts of areas these days. They come out of academia, they come out of management consulting firms, they come out of the field of education, public administration, the OD network, they come from all over the place. The only commonality that the people in our program have is that in no case do they come in with solutions to the problems of the particular workplace, be it a hospital or a coal mine. They come in to help the people in the specific organization to develop themselves as a resource to decide what their problems are and what the solutions are. It is a process function.

Now if we have done our job right at this point, there is a Quality of Work committee composed roughly equally of labor and management people in a particular workplace; a plant, an insurance company, a state agency, with the mandate to look at pretty much whatever they want to look at and change whatever they, as a group, believe ought to be changed in that workplace in order that they can do what they do better and happier and more completely. The point is, it is the group that decides on its own changes.

There is sanction from the top because the way we establish the program is to move in from the top of an organization and make sure that all of the people who can potentially say "no" have said "yes." We then create an experiment somewhere in that structure. So now there is sanction at the top and, hopefully, movement at the level where the work itself is done.

While all this is going on the Unitersity of Michigan is measuring what's happening. They are taking a look at several basic areas; I am guessing that given the occupational backgrounds of most of you, there is an interest in measurement research, so I will briefly describe it for you. Michigan looks at the economic effects of working in a cooperative manner. That's the kind of thing that management tends to look at anyway. Its profit and loss statement, balance sheet, quantity of output, sales, cost of production, marketing figures, those kinds of things. Management generally tends to get those kinds of measurements anyway, although you would be amazed at how badly they get them sometimes. Another major area looked at is attitudinal. What's happning to the attitudes of the people in the enterprise, and again whenever I say people I mean management, workers, staff, line--everybody. What happens to the attitudes of the people about that place where they work and the work they do. That's the kind of thing that management typically doesn't get and I think a lot of you are probably concerned with raising

that sort of consciousness in management and probably in labor quarters. Another major area is labor relations. Specifically what happens to the way that management and labor interact with each other as a result of a cooperative way of making change. And finally, we look at the technology; the technology doesn't just mean fancy machines, it means whatever the technical system is for producing the output of the organization and generally whether we are talking about an insurance company, or a coal mine, there is a technology. Technology can be heavily people-biased, heavily machine-biased, anything in between.

The long-range objective of all this is over a 5-to-7 year cycle (hopefully a cycle which will see many projects in many kinds of workplaces) creating and observing actual change in many places and desiring learning about what happens in an organization or what different kinds of things happen in different organizations as a result of operating in a participative mode. The hypothesis is, as I have said (and now the experience begins to back it) that you get two things: improved quality of working life for everybody and increased organizational effectiveness. I say that consciously, avoiding the term productivity, a term that has too many connotations that cloud the issue.

In the 18 months or so that we have been in the private sector we have established pilot projects or demonstration projects in a New York hospital, an agency in a state government on the West coast, a coal mine, a major food manufacturer, a wood and paper company, and the Harman International Auto Parts plant that I mentioned. I want to get to that specifically for a minute.

This is an auto parts plant of about 1,000 people in Tennessee in a twon about 60 miles or so from Memphis. A town called Bolivar. Its named after Simon Bolivar and why its sitting there 60 miles from Memphis and why its called Bolivar and why its named after Simon Bolivar I have no idea, but there it is. The auto parts plant is the major employer in the town. It's a farming community in which, for most of the people, this is the first generation off the farm and in a plant situation. The industrial revolution has just began to hit there. That project has been going for a two-and-a-half years now and it has, interestingly enough, gone through the worst recession the auto industry has seen in at least ten years if not twenty. This plant is a primary supplier in the auto industry, and it somehow managed to keep itself going. What they do here is make about 80% of Detroit's annual requirements of external mirrors; when I say Detroit, I mean all of the auto manufacturers in this country. And this one plant of 1,000 people makes 80% of all the external auto mirrors that are used in this country every year. That really amazed me; I would think that all the external auto mirrors that are used in this country every year were made in probably a hundred plants. This one place does that. With 1,000 people. They created a joint management/labor committee of the kind I have been describing, composed of about 15 people, including the district rep of the United Auto Workers who represented not only that plant but a number of others in the whole Tennessee, Mississippi and Arkansas region. It also included the local union president (the union president at the plant itself), the plant manager, the plant superintendent,

a design engineer and various other representatives from workers and management throughout the plant. About 15 people out of 1,000. That group jointly worked with three facilitators (if I can use that term) who were a pscyhologist from Harvard and a young married couple who were both in the process of getting their doctorates in psychology, also at Harvard. The facilitators came in imposing no structure; they said that the general purpose was to build a joint labor-management team which would analyze and solve work-related problems as it wished to. The group developed four what you might call moral or ethical principles that would be fundamental through the process of doing whatever they did. There are a couple of fancy words stuck in here which leads me to believe that perhaps the psychologists did have some input of their own, but there are also very easily understood definitions of the principles that are involved.

The first is security, and that basically boiled down to a promise that no one would lose a job as a result of the experiment. You aren't going to get people into an experiment having to do with productivity unless you tell them they are not going to get fired. Part of that is an assurance by the company that they are not into this thing for purposes of speed-up or layoff. The second principle is equity; that means that the jobs in the organizational structure must be fair and distributive. "Good" tasks and "bad" tasks will be parceled out. The third principle (and this is the word of which I am most suspicious when thinking about pscyhologists), is individuation. But the people at the plant don't talk in terms of individuation. They talk in terms of the fact that changes made would recognize the existence of and the differences between a universe of unique individuals. That's very important and, as a cornerstone, perhaps more so than these other things. Its really, at bottom a recognition of the fact that everybody is different. So many organizations, in fact virtually all of them that I'm familiar with, fail to take into account the simple and profound fact that everybody is different. Not only is everybody different but every organization is different and unique; it doesn't matter if you are talking about one Lever Brothers plant versus another, those are unique institutions. That's very important to keep in mind in considering this whole joint approach. The final principle is democracy. And that's one that everybody in America says, "Right, I know what democracy means, that's what I have been brought up with, that history book stuff, I'm comfortable with that" but what was meant specifically in this case was that decisions about work and the place in which people did their work would involve all those people in some way. Now there wasn't necessarily a particular representative government, it was simply stated that everybody would be involved and made to feel a part of the decision-making process. That's a large, vague area and it can take many forms, but its not something that you can brush over lightly in putting these kinds of things together. It will develop in its own way and it will be different in every place. And it is most likely not going to be the model that we are all so accustomed to in our federal and state and local governments.

The new joint committee first got into some easy issues; that's typically what groups like this do. They will start with issues that are less likely to be threatening, at least if they are being helped along by anybody with experience in group dynamics. They will be steered away from the issues

on which everybody has his back to the wall right away, anyway. If the first thing you do is say I want more money and shorter hours, you're not likely to get heard real well. In this case, they started with things like congestion at the time clocks in the morning and evening; people were piling up and there weren't enough time clocks. You couldn't get yourself punched-in in time and then you got docked by management for being late because you were standing in line waiting to stick your card in the time clock. They got into temperature; in some working areas it was too hot in the summer and much too cold in the winter. They got into the local sheriff's procedures. This was a little community in Tennesse of 4,000 people, 1,000 of whom work in the plant. There seemed to be frequent occasions when the sheriff's office had business with somebody or other in the plant, and what would typically happen would be that the sheriff would march in with a couple of burly deputies, creating a scene, stomp over to the place of the person in question and escort him with his feet about six inches off the ground into some management office where they would then interrogate him. That apparently went on quite frequently and it was one of the issues that the joint labor-management committee decided to address itself to. What they were pretty quickly and readily able to do was to get a new procedure whereby the sheriff would come in and say to the manager, "I want to talk to so and so" and somebody from the manager's office would quietly go out and get whoever it was.

They began to see some early success. Generally, a group like this has to see some success before they really begin to make moves on their own. They can't be confronted with frustration and failure initially or they are likely to fall apart. They've got to find themselves moving and in fact achieving something in some area. Well, they did see themselves achieving some movement in the areas that I have talked about. They began to feel they really had some power; they had some ability to influence what went on in that plant.

Then they got into what would be seen from a labor-management point of view as a much tougher area relating to how the jobs were laid out and the way the jobs were performed. They got talking about the supervision; the nature of supervision, the kinds of people who were supervisors, foremen, the content, the interaction between foremen and line workers, the relationship. They got into operations in areas like the throughput of the product, how did something move from one line of operation to another; they got into designing changes in how those things happen. They got into layout and types of machines; there were lots of machines in this plant, in which operations included everything from refining raw metal all the way through to producing the finished product. They had smelting and die-casting operations, and buffing and polishing and grinding and chroming and electroplating going on, a pretty complicated operation. They got into flexible working hours, pretty revolutionary still from the standpoint of most managers. It means a worker doesn't have to be at the plant at 8 and leave at 5 if he doesn't want to, as long as he does a day's work. He can come at 9 and leave at 6, or 10 and 7, or whatever, as long as he does his job and is there for 8 hours; he can adjust his working time somewhat to the other things happening in his life. That was pretty significant for farmers who were still carrying on a farming activity even though they were working in an auto plant.

They got into removal of quality control functions; this was again a very significant thing particularly from a standpoint of management. They changed the function of what quality control inspectors were there to do. These were people who up to this point had been there simply to scrutinize parts going by and spot errors and take the part back to wherever the error had occurred and file a reprimand. Quality control function was pretty much eliminated as such; there was still a quality control test to be done but the task was now performed by the workers and not be a quality control inspector, and there is a real message in that. I have heard a lot of people talking about ways to make the worker fit the task. Well, I suggest to you that the fact that a task exists to be done, like quality control, doesn't mean that there has to be a job called quality control. You can have other people who do other things do quality control as well as the other things they do. The fact that there is a task that is called sweeping up doesn't mean that we have to have a sweeper-upper. It is possible for a manager to sweep up his own office, for instance. Revolutionary, but there it is.

At about this point the recession hit the bottom, especially in the auto industry, and the plant had to close for about three weeks. It was an extremely interesting phenomenon that the quality of work committee kept meeting on its own time, and if any of you are familiar with labor forces, you know that people just don't do things on their own time. I mean normally you do not find assembly line workers doing anything on their own time. If they're doing anything beyond working hours they're getting time-and-a-half or double time or triple time or something. This committee kept meeting on its own time and it concerned itself essentially with helping to communicate to the laid-off people what was happening, what the outlook was and the fact that management was making every effort to open as soon as they could. There was a real conduit here now for management and employees to communicate with each other and there was, I think, much less alienation and hostility than would have been generated in this closed-down situation had it not been for this committee. A community had begun to develop.

The plant reopened and the industry began a slow recovery which you all know about by now because now Detroit is predicting the biggest year in the last ten. A trend emerged in the plant. The standard quotas and the general productivity standard that had been set and that had existed for a long time back to the pre-project days was now being met in 6 hours and 5 hours or sometimes even 4 hours out of 8. An individual or a crew that, prior to this point, had needed 8 hours to put out a standard quantity that had been set by the industrial engineers and people up in management who had the wisdom to set standards suddenly were getting their work done in 70%, 60%, 50% of the time. Well a natural management reaction to that is, "we can double production," or similarly, "we can cut the workforce and continue to put out the same number of units." But you remember the company had promised there would be no speed-up or layoff as a result of the project. So the thing that came out of that was what the workers and the managers there called "idle time." And what they did was set up a system whereby when you as an individual or as a crew had reached your quota the rest of the day was yours, you could do whatever you wanted to. As I said, half these people were farmers

and what they wanted to do was go home and farm and that's what they did. At least an equally large bunch were beer drinkers and this was of considerable boom to the local saloon economy because they guys went off and spent a lot of time drinking beer on their earned idle time. A goodly number of them, however, were people who decided they wanted to use their time for improvement of some sort, some constructive activity. What they did was, and this is now the joint labor-management group and lots of other employees and managers who by this time were brought into the decision process, they set up a school. The school exists on plant premises, on working time, and is taught largely by the workers themselves. There were a number of skills that the people said they wanted to learn, different people wanting to do different things, and there were a number of people in the workforce, as it turned out who had the skills to teach some of these things. In situations where there was nobody around who could teach something that somebody wanted to learn they went out and got an outsider from somewhere. That school is now going; it involves something like 60% of the workforce in the plant; they are studying things like welding, sewing, machining, cooking, nursing; first aid, secretarial and clerical skills, bookkeeping, accounting, really quite a gamut of things that are being eagerly absorbed by this group that found its own way to get that education.

It is important to note that this is a real productivity gain; you've got the same output now being turned out 70%, 60%, sometimes 50% of the time; there is no way that that isn't going to be seen as a productivity gain even by the most dyed-in-the-wool traditional economists. In this particular situation the gain is all going to the workers. The workers get the time off, yet they get paid for 8 hours, they get the same pay that they got for the 8 hours that they put in before the project. They've got the one, two, three, and four hours off they didn't have before, they are going to school during that paid time, and they are learning the skills that they themselves decided they want to learn, which they are teaching themselves. That is, I think, a classic example of win-win.

I want to say two brief things about what this all says about education. One is a very specific and obvious one, and the other not so obvious but perhaps more significant.

The obvious education-related result is the school and its popularity. A participative system in a working situation can and often will produce explicit education as an outcome.

The less obvious point is that, even without the school, education is what happened. People learned how to do their jobs better. They learned how to change the organization so jobs could be done better. They learned that they could change themselves and their interaction with each other and with the larger system. Most important, they learned that they could learn.

All of these kinds of learning, vocational learning in a very basic sense, a "work" education, I submit that sort of learning will invevitably be a major outcome of a <u>real</u> participatory system.

Future Think: Training and Development . . . Where Do We Go from Here?

by Don Kirkpatrick and Kevin O'Sullivan*

Keepers of the Watchtower

At a time when respect for most of our institutions is at an all-time low . . . when politicians and clergy and law enforcement people are all having their troubles keeping our world glued together . . . who are the "Keepers of the Watchtower"? Who can we turn to for answers affecting the human condition . . . the negative side-effects of industrialization . . . the reasons behind a fairly consistent history of man's inhumanity to man?

We're going to suggest that perhaps at least some of the keepers of that watchtower are here in this room today. In plain terms: Who is better qualified to deal with the essential issues of human nature, human dynamics and the productive development of human resources than we are?

Admittedly our track record as a profession has been uneven in most areas affecting the substantial improvement of the human condition. But then again, we're really very young at this business. The accumulating fund of knowledge leading to a true science of Human Resource Development has only recently been put to use.

H. G. Wells pointed out that "Human History becomes more and more a race between education and catastrophy . . ." And as the world seems to spin faster with each passing day, his statement has more relevance today than ever. Here we are, the end product of thousands of years of civilizing and culturing . . . and yet a glance at a newspaper front page reminds us that we still have some long miles to run in our race with catastrophy.

Most philosophic discussions of the state of the nation and the world always revert back to the simple concept that we are gregarious, social creatures. We need each other. And we need to rely on education, training, and human resource development to keep our community of creatures together and viable.

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*Highlight quotes from a multi-media presentation by Don Kirkpatrick, President of The American Society for Training and Development and Executive Vice President Kevin O'Sullivan, as featured during The 31st Annual National Conference in Las Vegas, Nevada. Mr. O'Sullivan repeated the presentation at the 1975 National Vocational Education Personnel Development Seminar.

The Rediscovered Emphasis

Mark Twain recognized that fact years ago, when he wrote: "Training is everything. The peach was once a bitter almond; and cauliflower is nothing but cabbage with a college education."

The unparalleled growth of our profession in recent years implies that the word is getting around. Whether we're talking about companies or countries, we can see the rediscovered emphasis on such basic principles as the appreciation of human values . . . team building . . . productivity . . . positive redirection of aggression . . . interpersonal sensitivity . . . creative problem-solving. And constructive two-way communications between parent and child, supervisor and worker, salesman and customer, and even occasionally, politicians and their constituency.

And let's not forget landmark social movements like women's liberation--which at the moment has an increasing number of male chauvinist pig persons in begrudging retreat . . .

Respected spokespeople from many sectors are joining the vanguard on offense. Listen to this ringing endorsement by Dr. Laurence Peter: "Men occupy the upper levels of any hierarchy. Why should we deprive women of their rightful place in incompetence? We shouldn't disciminate against women just because of the shape of their skin . . ."

Dr. Peter, as you know, is the author of the Peter Principle, which states that, "In any organization, an employee tends to rise to his or her natural level of incompetence." The obvious challenge, then, for our profession, is to analyze the implication of the Peter Principle--and then stave off its happening to us--and to the people we serve.

A Lingering Image

Years ago, the image of the so-called "Training Director" applied in large measure to unsung individuals who were occasionally seen carrying flipcharts from room to room--or who saw themselves as marking time in a temporary way-station on their track to future assignments in personnel, marketing, or administration. The image still lingers in places where trainers have not yet understood--nor documented--that their efforts can have bottom-line significance in supporting an organization's effectiveness and achievement.

Show us training and development professionals who are recognized for competency and contribution--and we'll show you individuals who began with belief in themselves and then made believers of their management by proving in quantitative ways that their programs were accountable, productive, and cost-effective.

The APC Formula

As we plan for the future, it's well for all of us to keep that simple APC formula in mind: Accountability, Productivity, Cost-Effectiveness. Are our programs and systems accountable in their achievement of practical objectives? Have we helped individuals to become increasingly procutive, efficient, and competent? And is our operation cost-effective when the level of output is matched against the input of both financial and people resources?

If the answer is "No," particularly in a tight economy like ours, we're likely to see a continuation of the familiar axiom that "When budgets are cut, training is the first to go . . ." But when we can prove accountability, productivity, and cost-effectiveness, we are in a greatly strengthened position to assume rightful partnership as consultants and contributors to our organization's future progress and well-being.

Oncoming Generations . . .

And looking toward that future, what kind of individuals will be leading our profession . . . five, twenty, or fifty years from now? What qualities will distinguish oncoming generations of trainers and human resource development specialists--and ensure their success in the years to come?

. . . Willing to Pay the PRICE

We believe that success can come to anyone willing to pay the price for that success . . . and we have an acronym to help us illustrate what we mean: The "Price" for future success in our profession is based on the market value of five words: Pragmatism . . . Resilience . . . Imagination . . . Confidence . . . and Excellence.

Pragmatism

"Pragmatism" means simply that we must truly be practical, problem-solving change agents when we engineer our various environments for learning . . . conscious of constraints, systematic in approach, and mindful that every program must be oriented to specific results. Some critics like to label us as Ivory Tower Types--"The Happiness People"--involved as we are with esoteric concerns like job enrichment, humanistic management, and personal satisfaction in the workplace. After all, how practical is all that stuff?

As we know, it's very practical . . . and is one reason that American Business is finally beginning to realize that it has much to learn from the Japanese--the Swiss--the Swedes . . . who believe in such concepts--and whose productivity margins far surpass our own in U.S. Industry. What do we mean by "Pragmatism"? Simply a combination of practical realism . . . and practical idealism . . . in support of practices to improve human productivity and the human condition.

Resilience

"R" is for "Resilience" . . . optimism . . . the talent to bounce back when a stone wall suddenly presents itself. All of us who have ever had a good idea shot down know the value of this special internal resource.

It's been said that a sale in most markets is only closed after an average of five calls . . . and that 80% of the sales are closed by 20% of the salespeople. What do those 20% have that the 80% don't? A lot of talents, of course, but among the most important are persistence, good humor, and "Resilience."

Imagination

"I" is for "Imagination" . . . the special quality which gifted trainers seem to possess in unlimited supply. The understanding that the mind is like a kaleidoscope with billions of bright, unique bits of information and experience which can form new patterns, new mosaics, which in turn inspire and illustrate new ideas.

It has been well documented that creative thinking can be taught through encouragement and reinforcement of a kind of counter-discipline approach to problem-solving. The practitioners point out that what we call classic creativity is essentially a dynamic blending of Knowledge and Imagination . . . followed subsequently by Evaluation and Application.

It isn't always easy to free our imagination to do its natural thing. The simple act of freely turning our mental kaleidoscope tends to be increasingly conditioned and restrained after about the age of three or four. As our friend Mark Twain once observed, "Isn't it too bad that we have to interrupt a child's education to send him to school . . ."

The capacity for imagination means the willingness to explore new ideas, new approaches to old problems. The joy of letting our minds run free, while suspending disbelief and judgment. The fun of playing with concepts, knowing that the hard decisions can always be made later on. We just need to remember that the important non-rule of the game is total dedication to the serious business of fooling around . . ."

Confidence

And when you enter into the Work Phase of choosing among competing or contradictory ideas, it's helpful to carry "Confidence" with you. Confidence that you can validate and quantify your achievements--and build on successes accomplished in the past.

Virtually every motivational specialist stresses that theme over and over: Concentrate on your strengths--and capitalize on them. Ignore your weaknesses unless they excessively slow you down. Always come back to recognize the many things you do well. And practice them as often as you can!

Self-confidence tends to inspire confidence in others--whose confidence in turn inspires confidence in you. It's a positive reinforcement cycle which perpetuates and strengthens itself eternally. Sometimes that kind of self-generating confidence is called "Chutzpah" . . . and every leader this world has ever known possessed it to some degree . . .

Excellence

And finally, the letter "E" in the "Price" we'll need to pay for future success: Standing for "Excellence." Granted, we may never achieve all we may aspire to; but the important thing is to keep trying. In the final analysis, excellence is a continuing process rather than a short-term result. Successful practitioners know that excellence is not a state of the art so much as it is a state of the mind.

John Gardner went right to the point when he said: "We must learn to honor excellence in every socially-accepted human activity--and to scorn shoddiness, however exalted the activity. An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because plumbing is a humble activity--and tolerates shoddiness in philosophy because it is an exalted activity--will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water."

Enthusiasm

Another word we might have matched with the letter "E" is "Enthusiasm." It's been said that "charisma" is enthusiasm focused and amplified. Projected vibrations which draw people to you--so that they can warm themselves by the inner fire which you are willing to share with them. "Enthusiasm" is a special kind of gift. Some call it God's light in humankind. And yet, all too often, particularly today, it seems in very short supply. Enthusiasm is something we're born with. And one of life's challenges--and the challenge of the future--is to retain that special energy within us as we make our way in the world. The alternative may be that we will soon grow old before our time.

A Temper of the Will

With his gift of eloquence, Douglas MacArthur said it this way: "Youth is not a time of life; it's a state of mind. It is not a matter of ripe cheeks, red lips and supple knees; it is a temper of the will, a quality of the imagination, a vigor of the emotions. It is a freshness of the deep springs of life.

"Nobody grows old by merely living a number of years. People grow old by deserting their ideals. Years wrinkle the skin; but to give up enthusiasm wrinkles the soul.

"Worry, doubt, self-distrust, fear and despair--these are the long years that bow the heart and turn the greening spirit back to dust. We are as young as our faith, as old as our doubt; as young as our self-confidence, as old as our fear; as young as our hope, as old as our despair.

"In the central place of our heart, there is a wireless station. So long as it receives meassages of beauty, hope, cheer, grandeur, courage, and power from the earth, from people, and from the indefinite, so long are we young.

"When the wires are down and all the central place of our heart is covered with the snows of cynicism and the ice of pessimism, then we are grown old even at 20. And may God have mercy upon our soul!"

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Credits

"Introduction" and "Panelists" film segments courtesy of Henson Associates (Attn." Al Gottesman), 227 E. 67th St., New York, New York 10021.

"Edifice," "Fooling Around," and "Parable" film segments from "Why Man Creates," courtesy of Pyramid Films (Attn." David Adams), Box 1048, Santa Monica, California 90406.

"History of Instructional Technology" adapted from an idea by Dr. William A. Deterline.

section five:

Simultaneous Program Summaries of Research and Development Efforts in Personnel Development

SIMULTANEOUS PROGRAM SUMMARIES

On Wednesday evening, October 29, 1975, seven simultaneous programs were presented concerning selected research and development efforts in personnel development. Each seminar participant attended the one session which was of most interest to him/her. This section presents summaries of each of the simultaneous program presentations.

Metric Education for Vocational, Technical and Adult Education

by Wayne E. Schroeder*

Transition to the metric system of measurement has been underway for a long time in the United States. The pace has increased during recent years, not because of legislative changes but from the practicalities of the market place. Current legislative developments will encourage the full changeover to metric within the foreseeable future. Among the many long-range requirements for this transition is a need for workers to think and act metric. It is believed that restructured programs for present and prospective workers, especially within the field of vocational, technical, and adult education, can contribute significantly to improved worker competence and attitude regarding metric measurement.

Recognizing this need and the potential for development, the U.S. Office of Education sponsored a three-year project at The Center for Vocational Education. The overall intent of this project is to encourage curriculum infusion relating to metric measurement within the vocational education classrooms and laboratories which in turn will lead to metric thinking and action.

Project tasks and resulting products are viewed as interrelated. A first effort centered upon the preparation of an annotated bibliography of 369 instructional and reference materials, organized to permit access by type of material, occupational cluster, educational level, author, title, and producing agency. Lists of suppliers, resource persons, and organizations are included.

A position paper dealing with the issues and problems of implementing metric instruction in occupational and adult basic education programs in the United States resulted from a second project task. Included are sections on metrication issues, the metric system, vocational-technical curriculum, adult basic education curriculum, and instructional strategies. This position paper not only provides a valuable input to the development of other products but serves as a useful resource for professional personnel who are interested in metric education.

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The largest single effort within the project is the development of instructional packages for 75 occupations. Activities relate to selecting occupations; developing objectives; deriving general and specific content; devising teaching and learning sequences; assembling or developing texts, visuals, exercises, tests, and references; and producing the packages. Activities have been divided between project staff, teacher consultants, and production personnel. All instructional packages will be tested with teachers and students, and refined upon the basis of collected data.

Metric instructional packages are being developed for three adult basic education levels. Content and instructional strategies are based upon a special advisory committee's recommendations, and program site visit observations. An adult basic education specialist has been developing the products which also will be tested and refined.

Implementation of the instructional materials will be aided by the conduct of in-service education workshops and the preparation of an implementation guide. A performance-based in-service education workshop program will be planned and conducted for vocational, technical and adult basic education program personnel in each of the ten DHEW regions. Approximately 750 persons are expected to exhibit competency with the metric system and the instructional materials as a result of the ten workshops. A guide is to be developed which will help state supervisory personnel, university teacher educators, local administrators, and instructional personnel implement instruction in metrics in local programs. Content for the guide will be based upon field trials with the instructional materials and tested in the in-service education program.

National Occupational Competency Testing

by Harold D. Garbett*

History and Purpose

In vocational education, we do not have the money or the time to follow traditional education patterns. We have been forced to find some new and better ways of doing things. The development of effective educational systems is the challenge of every vocational educator. I would like to discuss with you a new and refreshing approach designed specifically to upgrade vocational teaching and ultimately the skills and knowledge of the vocational student. We have had some very positive experiences in working with a national competency testing program and are finding benefits which raise some interesting questions. I wonder why this concept of national testing was not adopted many years ago--it seems so practical and realistic now.

This competency testing program is effective for vocationally oriented persons and includes both a written and a performance examination. I would like to talk to you for a few minutes about our involvement in this testing program and some of the benefits we see in the future. National Occupational Competency Testing is now established and is gaining recognition nationwide as a common bond and a cooperative venture of vocational educators. The National Occupational Competency Testing Institute (NOCTI), located at 35 Colvin Avenue, Albany, New York, grew out of a three-year Research and Development Project supported by the U.S. Office of Education. The National Occupational Competency Examinations were developed by skilled tradesmen, technicians, vocational educators, and test development specialists from many areas of the nation. The examinations are designed to measure the knowledge and skill levels of vocational teachers and potential teachers working in business and industry.

An early issue of NOCTI News contained an article entitled, "An Overview of the Original National Occupational Competency Testing Project," written by Dr. C. Thomas Olivo, Regional Representative for NOCTI and a professor in the Division of Vocational Education at Temple University in Philadelphia. Dr. Olivo explains:

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Rutgers University served as the control center of the National Occupational Competency Testing Project under the direction of Dr. Carl Schaefer. Dr. C. Thomas Olivo, the Project Director, provided administrative leadership in planning the major activities, processes, and products; establishing guidelines, and structuring a permanent organization. Dr. Adolf Panitz, the Associate Director, provided professional services in implementing the plans, designing the products, communicating results, and conducting analyses.

The remaining Principal Investigators (Dr. Carl Schaefer, Mr. Richard Nelson and Dr. Melvin Barlow) and the Planning Committee of outstanding knowledgeable vocational educators served in overall planning related to coordination, management, promotion, establishment of advisory councils, and recommending Braaten, the U.S. Office of Education Project Officer.

Written and performance tests were developed in twenty-four major industrial occupations. Twenty-four interim Pilot Area Test Centers were established in strategic locations throughout the United States with each Center field testing at least ten of the twenty-four tests.

Each of the tests was developed under the direction of a Pilot Area Test Coordinator who had demonstrated a capability to bring competent occupational specialists together and to get maximum interaction and output. The efforts of these coordinators were supplemented by the Project Director and Associate Director through group and individual conferences.

Outstanding resource people from industry (management, craftsmen, and labor organizations), industrial teacher trainers, military test personnel, and others contributed to their knowledge and experience to test development and administration. The Pilot Area Testing Centers were located to provide easy access for the occupational competency testing of candidates from other states.

Further explanation of the research and development that brought about NOCTI and its birth is given by Dr. Milton E. Larson, Professor of Vocational Education at Colorado State University and Regional Representative for NOCTI. He stated:

PHASE I of the project established the feasibility of forming a Consortium of States for Occupational Competency Testing. It also established the practicality of making multiple-level occupational competency analysis on a national level. During this phase, a comprehensive literature survey and on-site study of efforts by public and private industries, military and other organizations was made. A *"Handbook"* and other guides for test development and administration were developed. Two tests were developed and field tested in four regions of the United States.

PHASE II of the project concentrated on the development and field testing of ten additional competency tests. Test developers and examiners were selected.

PHASE III included the development and field testing of twelve additional competency tests. Additional test administrators and examiners were added to those previously selected. Test data was statistically analyzed. Steps were taken to perpetuate functions and services performed by establishing The National Occupational Competency Testing Institute.

The National Occupational Competency Testing Institute was conceived as a means of improving the quality of vocational education through improving the qualifications of those who teach and those who work in Trade and Industrial and Technical fields.

Each of the NOCTI examinations has two sections: a written test that covers the kinds of knowledge gained on the job, technical and factual knowledge, understanding of principles and problem-solving abilities, and a performance test that enables the candidate to demonstrate the skills that a competent craftsman or technician uses in his daily work. I believe there has been increasing interest in NOCTI tests by all facets of industry and education.

In the January 1975 issue of *School Shop*, in an article entitled, "NOCTI Seen as Major Breakthrough," Dr. Carl J. Schaefer, Professor of Education at Rutgers University and Regional Representative for NOCTI stated:

> It is obvious to a number of us in the field . . . that the National Occupational Competency Testing Institute (NOCTI) represents a major breakthrough that has been long overdue . . . during this time of "competency based and performance based" teacher education, the NOCTI effort represents a major step, only now being realized. Unfortunately, competency based teacher education has concerned itself only with pedagogy and not subject matter expertise. The NOCTI effort in essence says one cannot teach what (is) not known. Thus, it represents a major contribution to the refinement of the "state of the art."

The Idaho Test Center at Idaho State University

Idaho State University has been named the Idaho Occupational Competency Test Center and is responsible for occupational testing in cooperation with the National Occupational Competency Testing Institute. We have a Consortium in Idaho which acts as an advisory group to our test center. This group is composed of vocational teachers and administrators at high school, post-secondary, and state levels. We now recognize the need for adding personnel from business and industry.

The NOCTI program is an extremely important development and will continue to expand in its significance to vocational-technical education, teacher educators, and the businesses and industries served by vocational education. Idaho State University participated in the first national testing program in April 1974, and has been involved with NOCTI testing since that time. At the present, NOCTI examinations are administered nationally twice a year, in the spring and in the fall. Hopefully in the future, we will be able to expand and test as often as there is a need.

The Idaho Consortium recognizes three major purposes for the NOCTI examination: (1) Credit--Assessment of acquired competencies and the granting of appropriate university credit toward a baccalaureate degree program for vocational educators. Through successful completion of the NOCTI examination, Idaho State University will award up to 50 semester credit hours toward a 120 credit hours teacher education degree program; (2) Certification--To help participants qualify and meet State of Idaho Certification Standards for Vocational Educators; (3) Diagnostic--Candidates taking the NOCTI examination help vocational education serve industry by determining the present skill level of the craftsmen and technicians in these fields. This diagnostic factor also provides a basis for determining specific needs in in-service workshops and institutes for individuals already teaching. Those who successfully complete the examination receive a certificate of competency from Idaho State University.

We have seen a great deal of enthusiasm for this program which has helped rally tremendous support from the Idaho State Department of Vocational Education, Idaho Vocational Educators, and Idaho State University. I would suggest that other states looking for ways to solve their problems in improving vocational education programs through improved instruction could benefit greatly by looking at this plan.

I would like to quote Dr. Milton Larson once again from an article entitled "Let's Put Our Shoulders to the Wheel--Now!" taken from an issue of NOCTI News. Dr. Larson stated:

> The most valuable movement of the decade for Trade and Industrial and Technical Education may be occupational competency testing. After all, the competency of teachers is the first step in building a quality program of education. The improved method of determining teacher competency in the specialty is the use of the NATIONAL OCCUPATIONAL COMPETENCY TESTS.
>
> Some states are using the results of the tests as one factor in deciding the qualifications of candidates for the vocational teaching certificate; others are considering this approach.
>
> A large number of colleges and universities are recognizing the function of the competency test as a method of establishing proof of acquired skills and knowledges as a basis for credit leading to the baccalaureate degree.

While these functions are the primary concerns of NOCTI, time may result in the identification of other appropriate and related uses.

The merits of the occupational competency tests suggests their worth for improvement of Trade and Industrial and Technical Education, and for progress towards the baccalaureate degree. Now the challenge is to expand these uses. More individuals and more states need to participate in the NOCTI movement. Now is the time to lend your support: help build a strong consortium of states, take the time to promote NOCTI in your state and tell the story of the NATIONAL OCCUPATIONAL COMPETENCY TESTING INSTITUTE and its program.

May I share with you for a few minutes some highlights of a recent survey I conducted on a national basis concerning National Occupational Competency Testing?

Survey Report

In working with the testing program and exchanging ideas with other vocational educators concerning competency testing, I became interested in the direction being taken with NOCTI by other colleges and universities. Last spring I conducted a survey asking for additional information concerning the use of NOCTI examinations on a state by state basis, and I was gratified by a 97% response from the then 32 Area Test Coordinators across the nation. The latest information available indicates that there are now 34 Area Test Coordinators representing 35 states.

In our survey, just prior to the 1975 spring test, we tabulated a total of 991 tests that had been administered to persons in 24 occupational fields since the 1974 spring testing. Since the program is new, I believe this number to be exceptionally good. Although all of the 24 test areas had been utilized in testing, it was evident that some fields were more popular than others. I suspect there is a close correlation between the number of vocational programs compared to the popularity of the tests.

The examination fee for participants ranged from a minimum of $80 to a maximum of $150 with $100 being by far the most common cost to the individual. The system developed in each state for the payment of these candidate fees varied greatly and many were subject to change as the state programs grow. However, at this point, a little over half of the Area Test Coordinators reported that their states placed responsibility for payment of the candidate fees solely upon the candidate, 4 states required the candidate to pay the fee or partially pay the fee. Under some circumstances, various other sources or plans were available to assist or replace the candidate's responsibility; and 8 states have a plan whereby the candidate's fee is paid entirely by other sources. It is my feeling at this time that each test center should budget to take care of most costs involved in administering the tests and that the test participant's contribution be limited to a minimum fee. However, some of the factors that need to be considered when establishing fees are:

1. What is the motivating factor for the individual in taking the test?

2. Is he attempting to convince certification boards that he should be certified?

3. Was he asked by his administrator to take the test in order to assist the state in establishing norms for the state within a particular occupational field, and/or for diagnostic purposes?

4. Does the candidate wish to earn college credit leading toward a degree based on his/her occupational experience and expertise?

5. Or for other reasons we may have time to discuss here this evening.

My next question was in regard to whether or not academic credit leading toward a degree in vocational teacher education was awarded to those persons who successfuly completed the NOCTI examination, and if so, what would be the cost per credit hour to the applicant? Twenty-eight of the 30 responding Area Test Coordinators replied "yes," academic credit leading toward a degree in vocational teacher education was awarded to those persons who successfully completed the NOCTI examination. The cost per credit hour to the applicant ranged from no charge to a $20 per credit hour charge. The number of credit hours awarded ranged from 9 to 64. There was a variance among universities, of course, as to whether the credits were semester hours or quarter hours and the type of degree to be completed. For instance, Milton Larson reported a maximum of 64 quarter hours awarded at Colorado State University with no charge to the candidate. Idaho State University awards a maximum of 50 semester hours with a charge of $2 per credit hour. Leroy Mohn, Area Test Coordinator in Pennsylvania, reported that at the 90 credit level of a 128 credit B. S. program, the student is permitted to purchase 24 credits (by examination) at $10 per credit hour. And Thomas Arcy, Area Test Coordinator in Iowa reported that Iowa State University awards up to 45 quarter hours credit toward a degree program after the candidate has accumulated 15 hours on campus and completed written, performance and oral exams. The total cost is $15 to the candidate. It is apparent that there are no two programs operating in exactly the same manner, but I must emphasize one important point. The states in many cases are allowing people to use their invaluable work experience and through the testing program, help them obtain a vocational-technical teacher education degree--a very positive trend in my estimation.

The majority (21 of 30 responses) of the Area Test Coordinators reported that the NOCTI examination was <u>not</u> tied to their state certification standards in any way. However, approximately half of the coordinators added that steps were being taken in this direction, or that plans were now under discussion or pending approval, and that the NOCTI examination would probably be a requirement in the future for state certification. The remaining nine Area Test Coordinators explained that the NOCTI examination was tied to state certification standards in one or two of these ways:

1. Some allowed the NOCTI test to serve in lieu of up to four years work experience, or in place of trade experience that was suspect or lacking.

2. Some states require a passing grade on an occupational competency test for licensure of certification in the particular occupation in which the candidate holds appropriate experience.

3. One coordinator stated that they simply allow the NOCTI test to serve as proof of a candidate's proficiency in his trade or craft.

4. One coordinator stated that entrance into the state funded teacher training program was dependent upon successful completion (70% level) of the competency examination.

Over half of the Area Test Coordinators reported that no minimal test scores for each of the NOCTI exams had been established in their states. The remaining revealed a large degree of difference at this point. For instance, one coordinator mentioned that cutoff scores were determined locally at each test center with different minimums for each occupational field, depending upon establishment of national norms. Another coordinator said that each person must pass at least 50% of the written and performance test requirements before credit is granted, while still another coordinator placed it at 70% in both the written and performance tests. In Idaho, minimum passing scores are 90% of the national mean in all test areas. However, minimum test scores will be reviewed after each spring and fall testing and are subject to change by the Idaho Consortium for Competency Testing.

In general, the comments we received indicate favorable experiences with the past use of the NOCTI examinations and a good attitude toward its continued use in the future.

In closing, may I suggest to you that if you have not already investigated the occupational competency program in your state that you do so soon. I believe you will find it not only a rewarding experience, but that you will have taken a step forward in a never-ending journey to the perfection of higher quality vocational programs. In education, could anything bring more satisfaction to an educator?

Copies of the NOCTI Survey Report are available here today along with Idaho's twofold NOCTI Brochure. Please feel free to take a copy of each. Additional copies are available through my office.

Cooperative Adult Education Study

by Allen B. Moore* and James C. Granger**

President Gerald Ford in an August 1974 Commencement Address proclaimed a new emphasis for industry/education cooperation across the United States.

> I propose a great new partnership of labor and educators . . . Accordingly, I have asked the Secretaries of Commerce, Labor and HEW to report to me new ways to bring the world of work and the institution of education closer together.

With any new thrust, it is important to look at what is currently happening and to study those efforts which may offer models for future development and refinement. No new emphasis can begin in a vaccum, without knowing what has happened and what is currently happening.

The overall goal for this Center for Vocational Education project sponsored by the U.S. Office of Education was to identify, study and disseminate information about Cooperative Adult Education programs which are currently in existence in order that the programs themselves may act as models and their experience may improve future collaborative efforts.

The field of industry/education cooperation for adult education is large and it has, in many states, a long history. There are management development programs, college/industry personnel exchange, and tuition reimbursement plans available in almost all industries and businesses. Interaction is ongoing everyday and covers many levels of cooperation--from fee reimbursement plans to teacher/worker exchange. It would be nearly impossible to cover the whole range of adult education in cooperation with business and industry in one study.

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The project focused its attention on one area of industry/education cooperation for adult learning. Not that any of the other types of programs are less important but in order that a more complete study may be undertaken, and to provide the specific information requested by the U.S. Office of Education, the project was limited to one area of cooperative education efforts. This area is industry/education cooperation for adults with less than a high school education. Specifically, those programs which were somewhat non-traditional in that they showed "true" cooperation and that they were completely locally administered. However, since many of the project results are related to the process of cooperation, the findings may be widely transferable to other joint efforts.

The project may be thought of in two phases, identification and study. The identification phase consisted of contacting some 15,000 persons, inquiring as to whether they knew of programs which met the parameters listed above. Contacts were made with all public community and junior college of the American Association of Community and Junior Colleges, all public school districts with over 3500 students, all members of the National Council of Local Administrators in Vocational Education, all state and regional directors of vocational education and adult education, state industry-education-labor coordinators, as well as a host of other suggested and identified persons. Some 238 persons were identified as potential directors of cooperative adult education programs through this process.

With all of these contacts, mailings, and follow-ups, it is still clear that not all programs in the United States have been identified. The goal of the project was not to identify all the cooperative programs in America, but to study a sufficient number to provide information for decision making and fostering other such efforts.

The study phase of the project began with the development of criteria by which the identified programs could be examined. A panel was selected with representatives from industry, adult educators, state department of adult education directors, labor organizations and local program directors participating. This panel was selected for their representative views and expertise in cooperative adult education. The panel followed something of a needs assessment process in developing the criteria in that the main question asked was, "What ought (in the ideal sense) to be a part of a good cooperative adult education program?"

The criteria identify twelve wide areas of concern and under each of these a varying number of more specific statements clarified the general topic. These specific statements formed the basis for the development of the questionnaire, telephone interview and site visit data gathering instruments used to study the identified programs. The twelve areas of concern or criteria developed by the panel were: (1) Needs Assessment; (2) Objectives; (3) Staffing; (4) Procedures and Materials; (5) Pre-Planning; (6) Funding; (7) Administration; (8) Job Placement; (9) Communication; (10) Evaluation; (11) Accepting and Screening Participants; and (12) Counseling.

A mail questionnaire was sent to the 238 program directors which were specified from the identification phase. Seventy-one of the program directors responded that they were currently carrying on programs which met the parameters. Many directors reported more than one program. Thus, a total of 108 programs were identified and reported in the product named *A Partial Listing of Cooperative Adult Education Programs*.

From this group of 108 programs, 29 programs at as many different sites were selected for telephone interviews. The project staff contacted the 29 program directors and gathered information about criteria specified by the panel. The information gained from these 29 telephone interviews was then formed into the abstracts which became the product known as *Abstracts of Selected Cooperative Adult Education Programs*. The directors of the program reviewed and commented on these abstracts prior to their publication.

Reports on the on-site visits made by the staff and project panel were prepared with the title of *Case Studies of Selected Cooperative Adult Education Programs*. These reports contain the information gathered on-site which is related to the twelve (12) areas of concern. The directors of the programs visited, reviewed and commented on the case studies prior to publication.

A publication of guidelines which are related to the twelve criteria is found as *Guidelines for the Development and Study of Cooperative Adult Education Programs*. This product is designed to be a practitioner's handbook to be used by local program directors and state staff. While not professing to be the final word in cooperative adult education programming, this publication does provide some practical suggestions for the development and evaluation of cooperative efforts.

The last publication product resulting from the project is a paper entitled *Discussion of Industry/Education Cooperation for Adult Learning*. As the project proceeded it became apparent that there were some important issues related to cooperative adult education which needed further clarification. This publication reviews 14 issues such as developing interagency contacts, who benefits - who pays, and industry's view of cooperative programs. These topics are discussed in order to aid future development of cooperative industry/education efforts.

Conclusions

Through this project it is evident that cooperative adult education is an important component of many educational agencies across these United States. There are a great number of types of cooperative arrangements. Some programs identified had industries working with public schools, vocational and technical institutes, community colleges and state departments. Industries are providing direct funding, materials, release time and facilities for these programs. Generally these programs are meeting their goals and those involved with the results.

Some specific areas which are uncovered relating to cooperative programs may now be noted:

1. Many of these programs are begun because educational agencies are facing declining enrollments and they are looking for new populations to serve. Industry is looking for inexpensive training methods and is willing to implement basic education programs in hopes that it can upgrade employees' skills, improve morale and, perhaps, affect safety on the jobs.

2. Whenever two systems interface (in this case industry and education) there is the possibility of one system becoming subservient or a subsystem of the other. That is, one system stops trying to meet its own goals and becomes committed to the other system's objectives. Cooperative programs are very susceptible to this condition. The way to prevent this from happening is to have both systems or agencies clearly state the goals to which they are committed and to "stick to them." Clear communication of both parties' overall goals is one of the most important aspects of cooperative programs.

3. Cooperative programs require a strong leader, one who will meet head-on with both agencies. This leader is also the key linking-pin between the cooperating parties. Having such a leader as a linking-pin is necessary but can also be a problem. The problem arises when the leader becomes so "key" to the program that without him or her the cooperation is lost.

4. In the same vein, documentation is very important to cooperative programs. By putting things in writing the two parties, which in some ways "speak different languages," can be clear as to the program's needs, objectives and evaluation.

Some other findings in brief include: business is generally eager to cooperate once the "ice is broken"; unions want and need to be informed though they may not have the time for heavy involvement; and, absolute clarity of what participants can expect from involvement is a necessity.

Mr. Elliot Estes, President of General Motors Corporation, in a speech given before the professional organization of industrial trainers, commented on one of his industry's strategies toward training:

> The fourth and final strategy is the wider use of the external educational training resources that are available. We are trying to develop closer relations with schools, especially high schools and community colleges. We believe this may give industry and education the chance to form a new and mutually beneficial alliance.

We can see that industry is ready for cooperation, cooperation is possible; now the question is how great can the future be?

Relationship to Vocational Education

It is our belief that the future of cooperative adult education can be greater with the continued active involvement of vocational educators. Many of the programs we studied were fostered by persons in the field of adult education. It is the combined expertise of adult educators and vocational educators which fully "round-out" the programs under study. Each brings a knowledge base to the program that is necessary for a truly quality effort. The ideal is a four pronged approach, combining industry management, representatives of organized labor, vocational educators and adult educators.

One specific area in which the expertise of the vocational educator is valuable relates to career or vocational counseling. During the study of cooperative programs it was clear that guidance programs, where they existed at all, did not adequately serve adults. The important strides which have been made in vocational guidance need to be adapted to adult cooperative programs and infused into these programs.

A second area concerns the relationship of the participant's work to the educational programs. Several of the sites we visited lacked a strong linkage between the program content and what the participant does on his or her job. For example, participants interviewed expressed the desire to learn math as it specifically applied to their job. One industry was in the process of converting their machinery to metric dimensions. The methods and procedures vocational educators have developed, and use, which apply the curriculum to experiences on the job would be very helpful in this type of cooperative program for adults.

Finally, the evaluation of cooperative adult education programs could be improved with the increased input from the field of vocational education. Again, the methods and procedures used in vocational education to measure program success and plan for improvements need to be adapted and put to use in cooperative programs.

These three were only an indication of the great number of areas where vocational education has and can continue to contribute to cooperative programs for adults. These programs can open whole new populations which can be served. By cooperating with industry, educational systems can find new friends at tax levy time or when state priorities are being set. The future of these types of efforts is exciting and it will take the continued combined expertise of the adult and vocational educator to see it through.

ompetency Based Post-Secondary Teacher Education Program

by Leo Schreiner*

During the past several years there has been an increased emphasis on the development of new, and the revision of existing, instructional programs for teacher education. Many studies and conferences have been conducted to identify strategies for development of curricula for effective preparation of teachers in professional education. The most recent movement for improvement of teacher education is that of competency- or performance-based teacher education.

The competency-based teacher education movement has come to mean many things to many different people. There were many different interpretations of its meaning written during the early years of the movement. The term "competency-based teacher education" is a more comprehensive concept for it tends to focus attention on the specification and assessment of consequence competencies as well as cognitive and performance competencies.

Regardless of the terms used to describe competency-based teacher education, there must be more agreement as to the composition of programs based on this concept. Teacher educators seeking assistance in improvement of their curricula may gain direction by studying basic concepts identified by people such as Houston (1972:27) who stated:

> SPECIFIC ASSUMPTIONS: Prior to identifying goals and objectives of a program developers often identify the assumptions upon which the program is to be based. These often refer to, but are not limited to, assumptions about individual differences, learning, societal forces, teacher roles, schools and education, and institutions. These basic assumptions are often beliefs or professional hunches, sometimes based on research and sometimes based on environmental conditions.

These are excellent points to remember in developing any program whether it be secondary curriculum or the curriculum for teacher education. Yet, vocational teachers have been taught for years that curriculum or courses

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of study cannot be properly developed without first doing an analysis of the occupation to be taught. Houston (1973:33) indicated that occupational analysis is appropriate for developing programs of teacher education:

> TASK ANALYSIS: Sometimes referred to as role analysis, in this approach the teacher is observed in the act of teaching. These observation records are then analyzed and a teacher preparation curriculum is based on that analysis.

Houston and Howsam (1972:5-6) further described competency-based teacher education by listing the following characteristics of competency-based instruction: (1) specification of learner objectives in behavioral terms; (2) specification of the means for determining whether performance meets the indicated criterion levels; (3) provision for one or more modes of instruction pertinent to the objectives, through which learning activities may take place; (4) public sharing of the objectives, criteria, means of assessment, and alternative activities; (5) assessment of the learning experience in terms of competency criteria; and (6) placement on the learner of the accountability for meeting the criteria. It became apparent that a common factor in defining and developing competency-based teacher education programs was that all such programs must be developed on the basis of identified teaching competencies.

A competency-based secondary teacher training program has been implemented in the state of Texas. Dr. Billy N. Pope (1972) and Dr. Bill Lovelace (1975) have been instrumental in the research, design and continuing implementation of the system in the north Texas area of the state.

The system for human resources development is presented in Figure 1. The explanation and further details of each component is explained, in outline form on the following pages.

FIGURE 1

DEFINE REQUIREMENTS FOR PREPARATION OF PERSONNEL
DEVELOP OBJECTIVES AND EVALUATION
DEVELOP AND VALIDATE PROGRAM FOR PERSONNEL DEVELOPMENT AND IMPROVEMENT
CONDUCT AND EVALUATE PROGRAM
RECYCLE TO PREVENT OBSOLESENCE
ANALYZE REQUIREMENTS OF SYSTEM
HUMAN RESOURCES
DEVELOPMENT SYSTEM

I. ANALYZE INSTRUCTIONAL SYSTEM

A. Obtain Data to Describe the System:

1. Its purpose or objective

2. The functions required to achieve the objective

3. The teacher's responsibilities in the system

4. The components or subsystem in the system

5. Materials and equipment required to support system

6. Established procedures for operation of the system

7. The effects of environmental factors on operation and maintenance of the system

II. ANALYSIS OF INSTRUCTIONAL SYSTEM PROVIDES

A. Developmental Data for:

1. Performance and design requirements

2. System equipment and personnel functions

3. Equipment and facilities required to support system operation and maintenance

4. Human (job) performance requirements

5. Personnel, training, training equipment, and technical requirements

B. Planning Data for:

1. Stating purpose or objective of system

2. Identification of user

3. Management responsibilities of user

III. JOB PERFORMANCE REQUIREMENTS

A. Identify Tasks Required of Human Component of System by Analysis:

1. Job inventory of tasks

2. Job performance standards

B. Identification of Tasks and Performance Standards Provides Specifications of:

1. WHAT is to be done
2. WHY it is to be done
3. WHEN it is to be done
4. WHERE it is to be done
5. WHO is to do it
6. HOW it is to be done
7. HOW WELL it is to be done

IV. ANALYSIS OF JOB REQUIREMENTS

A. Provides Data for:

1. Determining qualitative and quantitative requirements for improvement and/or preparation of personnel
2. Translating duty and task data into instructional objectives, instructional standards, and criterion-referenced evaluation
3. Continuous updating of job requirements

B. Will:

1. Identify all tasks, equipment, and materials needed to do the job
2. List the conditions under which the tasks are to be performed
3. Emphasize unique duties and tasks to describe the nature of the work

V. DEFINE EDUCATION REQUIREMENTS

A. Develop Instructional Standards

B. Select Method(s) for Preparing Personnel

C. Identify Factors Affecting Selected Methods

D. Identify Resources

VI. INSTRUCTIONAL STANDARDS

A. Are Used to:

1. Develop formal courses

2. Prepare learning objectives, instructional materials, and evaluation criterion

3. Establish internships and practicums

4. Perform follow-up on graduates

B. Are Developed by:

1. Identifying quantitive requirements

a. Personnel performing task

b. Relative importance of task

2. Determining qualitative requirements

a. Frequency of task performance

b. Learning difficulty

c. Interval between training and use

d. Prior experiences of trainees

VII. RESOURCE REQUIREMENTS

A. Facilities

B. Materials and Equipment

C. Personnel

D. Funding

VIII. METHODS OF PREPARATION

A. Formal Courses of Instruction

1. Existing courses

2. Revised courses

3. New courses

B. Workshops and Institutes for Updating

C. Cooperative Internship or Practicum

FIGURE 2

TASK ANALYSIS WORKSHEET

Instructional Assignment_____

Function or Duty_____

ITEM NO.	TASK	EQUIPMENT USED	MATERIALS USED	WORK ENVIRONMENT	SOURCE REFERENCE
	(List all tasks required to carry out duty or function)	(List all equipment needed to carry out task)	(List all materials needed for completion of task)	(Describe physical environment such as classroom, laboratory, or industrial site)	(From what source(s) was information for task taken)

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A Program to Prepare Entrepreneurs

by Christopher J. Kalangi*

The major theses of my presentation, as outlined in the attached list of statements were that successful entrepreneurs are needed now more than ever; that they can be trained; that while vocational education lends itself excellently to the development of entrepreneurs, having traditionally been oriented to preparing its students for employment, it does not have programs to develop entrepreneurs; that knowledge about and instructional materials for the development of entrepreneurs are lacking; and that comprehensive programs for the development of entrepreneurs through vocational/technical education are urgently needed.

Suggestions for a statewide program included the following:

1. Introducing the concept to decision-makers, key change agents, students, teachers, entrepreneurs, bankers, and community leaders through conferences and seminars.

2. Enacting state legislation for facilitating the development of entrepreneurs through vocational education programs.

3. Developing curricular materials for career awareness, exploration and decision-making.

4. Training teachers to teach entrepreneurship and counsel students and alumni.

5. Conducting research to study/develop/validate instructional materials, teaching cases, instruments for identifying potential entrepreneurs and the results of programs.

In the discussion that followed the presentation, there was consensus among the attendees on the theses presented.

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Among the issues that came up for discussion were state legislation, the problem of a single teacher teaching the entire course on entreprenuership which is multidisciplinary in nature and the level or levels of formal education at which entrepreneurship courses should be taught. Relative to these issues, the participants opined that while state legislation may be useful, concerted action by the school communities to introduce the teaching of entrepreneurship in schools would produce positive results; that training was necessary for teachers to be able to teach entrepreneurship courses effectively, with team teaching and the use of consultants seen as necessary in instance; and that while entrepreneurship courses could usefully be taught at all levels of schooling, at the lower levels, instruction should be geared to awareness, changing to knowledge and motivation, the development of skills and decision making through the higher levels.

The outline of the presentation made follows.

A PROGRAM TO PREPARE ENTREPRENEURS
(A list of statements)

Statement 1:

Entrepreneurs are needed now and always to -

- provide employment
- speed up economic development
- promote regional growth
- foster the process of individual initiative
- strengthen the fabric of democractic societies.

Statement 2:

Entrepreneurs are a special type of people -

with certain motivations, attitudes and aptitudes characteristically associated with them. And potential entrepreneurs can be identified with reasonable accuracy.

Statement 3:

Entrepreneurs are made, not born -

Research has proved that people can be taught/trained to change their motivations and to become entrepreneurs.

Statement 4:

The development of entrepreneurs is not the same thing as the development of managers -

Entrepreneurship includes managing but management per se does not include entrepreneurship although it calls for enterprise.

Statement 5:

Vocational/technical education has traditionally prepared students for employment and not for self-employment -

Statement 6:

Vocational/technical education is well suited to the development of entrepreneurs -

Because research indicates that:

- technical skills and/or past business experience increases self-confidence of a person which in turn enables him to take the (calculated) risk that is so necessary in entrepreneurship.
- younger people have higher confidence levels.

Statement 7:

Knowledge about and instructional materials for the development of entrepreneurs through vocational/technical education are lacking -

- Some individuals in vocational/technical education do not know what entrepreneurship means.
- The ERIC System did not appear to have the word listed in its set of key terms.
- A recent Gallup Poll among college students showed that "a strong anti-business mood is prevalent on the college campuses of America" and that "at the same time a lack of knowledge and understanding of the free enterprise system is widespread."

Statement 8:

Existing career education materials do not present entrepreneurship as a viable career option -

Statement 9:

A comprehensive program for the development of entrepreneurship tnrough vocational/technical education is indicated -

including

- orientation of decision-makers and key change agents

. legislation

. training selected teachers in school systems

. development of a wide range of instructional materials appropriate for different levels of students with different objectives

. research on developing/validating instruments for identifying potential entrepreneurs and instructional materials

. career guidance programs both for students and alumni

Statement 10:

More specifically, a statewide program to develop entrepreneurs through vocational/technical education could include the following:

Introducing the concept:

. A state level conference/seminar of policy and decision makers, key change agents, students, teachers, active entrepreneurs, bankers, civic and community leaders.

. Followed by mini-conferences and discussion groups at lower levels down to each school system.

Proposing and enacting state legislation for items such as:

. required instruction in the free enterprise system

. formation of agencies to assist and catalyze entrepreneurship development (similar to Ag. Extension)

. setting up selected vocational/technical schools as Regional Entrepreneurship Development Centers

. participation of existing businesses

. providing financial, legal and tax assistance

. developing attractive incentives to prospective entrepreneurs.

Developing curricular materials on entrepreneurship for:

. career awareness at the elementary and high school levels

. career exploration at the freshman post-secondary level

. deciding upon/setting up businesses at the sophomore post-secondary level

. helping interested skilled adults to make up their minds and act

Training teachers at all levels to:

- understand the importance and relevance of entrepreneurship to national needs and its place in vocational education
- introduce programs in their school systems
- teach courses in entrepreneurship
- counsel students and alumni
- establish needed linkages with existing firms, entrepreneurs, associations, civic groups, governmental agencies, etc.

Conducting research to study/develop/validate:

- instructional materials
- teaching cases
- instruments for identifying potential entrepreneurs
- identifying success/failure causes
- results of vocational/technical education programs in entrepreurship on the students

Involving Business and Industry in Curriculum Design

by Lawrence Coffin*

While talking with employers, especially in a small business, one of the major problems in occupational training is its absence. It is true that many people are graduates of training programs found in our educational institutions. When one analyzes these programs being offered, it is quite evident that a large number of them are standardized across the country and surprisingly meager compared to the number of occupations that exist.

Training needs are not met for a variety of reasons. Our training systems over the years have developed patterns which tend to discourage occupational training that does not fit an accepted pattern. Vocational high schools tend to select programs in which the method and content meet the requirements of the public school system. Trade schools usually select occupations for which training requires a great deal of laboratory and shop work. Institutes of technology tend to select programs with a high degree of scientific content and universities provide training for professional occupations. However, when one analyzes all these programs being offered, many employees and employers cannot take advantage of them due to their lack of flexibility.

In most cases a training program is usually planned around a block of time and schedules are usually established. Once a start date for the course is set and the course is underway, an individual desiring to enter the program at a later date finds it quite difficult if not impossible.

If industry is to take advantage of training programs in institutions a flexible continuing education program must be established with the following points in mind.

1. Individuals must be able to enter and exit the program at any time.

2. A training program must be established suitable to the individual's needs.

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3. The curriculum should be identified by people currently working in the occupation.

4. Evaluation should be as realistic and meaningful as possible in keeping with the evaluation in the work environment.

It is the objective of this paper to outline an approach to individualized instruction currently being used at Holland College, Charlottetown, Prince Edward Island. This approach enables industry and individuals to take the maximum advantage of programs being offered in educational institutes.

Approach to Analysis

One of the most important areas in a training program is the accurate identification of skills performed by workers in the occupation. This paper will refer to an analysis which was made identifying the various skills required for an executive and administrative assistance.

This analysis was made following the DACUM (Development of a Curriculum) procedure for occupational analysis. This is a method developed by the Nova Scotia NewStart Co-operation and utilizes the identification of behavioral objectives. Only observable behavior is identified and the accurate specifications of these objectives is critical. The knowledge content is assumed to be supportive to the acquisition of identified skills on the chart and therefore need not be defined at this stage of development.

It is important to note that the Chart (Figure 1) is not prepared by people in education. Task groups for analysis purposes are drawn from the occupation or industry for which the chart is being prepared. A task group consisting of a minimum of five persons and usually around ten is convened and in effect identifies what a person should be able to do. Members selected must either be working as technicians or supervisors. Selection of task group members skills, or those a new employee would have to acquire are placed at the far left and the more difficult are placed on the right. As an individual is being trained the order of progression is towards the right. However, the order of progression from left to right is not a rigid one.

Program Development

Once the analysis of the occupation has been completed, the next major task is preparing material for the program. For every skill identified on the chart a learning package is prepared so that the program is totally individualized.

A program development grid (Figure 2) has been designed to assist in further analyzing each skill identified by industry. The grid is not designed to produce hard and fast specifications of learning activities. Instead it is to activate instructors to consider the range of potential learning activities so they can respond when the need arises.

FIGURE 1

EXECUTIVE AND ADMINISTRATIVE ASSISTANCE

Name _____

C	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE AND CAN LEAD OTHERS IN PERFORMING IT
4	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE WITH INITIATIVE AND ADAPTABILITY TO SPECIAL PROBLEM SITUATIONS
A	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE WITH PROFICIENCY IN SPEED AND QUALITY
3	CAN PERFORM THIS SKILL SATISFACTORILY WITHOUT ASSISTANCE AND OR SUPERVISION
2	CAN PERFORM THIS SKILL SATISFACTORILY BUT REQUIRES PERIODIC SUPERVISION AND OR ASSISTANCE
1	CAN PERFORM SOME PARTS OF THE SKILL SATISFACTORILY BUT REQUIRES INSTRUCTION AND SUPERVISION TO PERFORM THE ENTIRE SKILL
0	HAS SOME KNOWLEDGE AND LIMITED EXPERIENCE BUT NOT SUFFICIENT FOR PARTICIPATION IN A WORK ENVIRONMENT

Ratings on the chart are based on industrial performance standards. They are confirmed by an instructor (a skilled and experienced person from this occupation) who views and evaluates performance as he would in the role of an employer or supervisor.

Instructor _____

Date _____

A letter of reference attesting to the individual's attendance, punctuality, and work habits is available from the Registrar's office.

COMMUNICATE EFFECTIVELY AND DEVELOP PERSONAL COMPETENCE	PROJECT IMAGE OF ROLE THROUGH DRESS, GROOMING, POSTURE & HYGIENE	COMPOSE LETTERS OF APPLICATION AND PREPARE RESUME AND OR CURRICULUM VITAE	PARTICIPATE IN INTERVIEWS	EVALUATE PERSONAL NEEDS IN RELATION TO JOB OPPORTUNITIES	HANDLE TELEPHONE CALLS	RECORD AND COMMUNICATE INFORMATION AND MESSAGE RE CALLS OR VISITS	SCREEN AND OR DIRECT INQUIRIES
ASSIST IN MANAGING EXECUTIVE'S WORK	INTRODUCE NEW CONTACTS TO EXECUTIVE AND TO EACH OTHER	LOCATE CONTACTS AND PLACE CALLS FOR EXECUTIVE	PREPARE SCHEDULE AND RESOURCES AND DISCUSS DAY'S ACTIVITIES	EVALUATE REQUESTS FOR EXECUTIVE TIME AND TAKE ACTION	ARRANGE APPOINTMENTS	ARRANGE MEETING FACILITIES AND MATERIALS AND SERVE AS A HOSTESS	SET UP INTERVIEWS AND COMMITTEE MEETINGS
SUPERVISE AND DEVELOP STAFF	ESTABLISH PRIORITIES, ESTIMATE TIME FOR ASSIGNMENTS AND MONITOR	ANALYZE AND DISCUSS UNDERSTANDING OF AND IDENTIFICATION WITH ROLE	CONDUCT ORIENTATION PROGRAM	DESCRIBE JOB, FUTURE AND POTENTIAL GROWTH TO APPLICANTS	SELECT AND OR RECOMMEND PROSPECTIVE EMPLOYEES	INTERPRET ABILITY AND INTEREST, SET GOALS AND EVALUATE PERFORMANCE	DISCUSS AND ANALYZE CAUSES OF LACK OF PERFORMANCE
ORGANIZE AND MAINTAIN OFFICE ENVIRONMENT	ORGANIZE OWN WORK AREA AND SCHEDULES	MAINTAIN EXECUTIVE OFFICE ENVIRONMENT RE HOUSEKEEPING AND COMFORT	ORGANIZE EXECUTIVE OFFICE FOR DAY'S WORK	MAINTAIN MANUALS	ORDER AND ORGANIZE SUPPLIES	TAKE AND MAINTAIN INVENTORY	ORGANIZE, MAINTAIN AND CONTROL PETTY CASH FUND
ORGANIZE AND MAINTAIN CORRESPONDENCE AND FILES	SORT AND DISTRIBUTE INCOMING MAIL	CLASSIFY INCOMING MAIL IN ORDER OF IMPORTANCE	OPEN, DATE AND INTERPRET CONTENT OF MAIL AND DIRECT TO APPROPRIATE PERSON	ORGANIZE AND MAINTAIN LETTER RECORD	DETERMINE CLASS AND POSTAGE AND STAMP OR METER OUT MAIL	SELECT SERVICE, COMPLETE FORMS AND ARRANGE FOR EXPRESS MAILING	ESTABLISH AND MAINTAIN "BRING FORWARD" FILE
PERFORM BASIC BOOKKEEPING FUNCTIONS	MAINTAIN TIME RECORD SYSTEM	MAINTAIN RECORDS OF CASH RECEIPTS	MAKE BUSINESS DEPOSITS	MAINTAIN RECORDS OF CASH DISBURSEMENTS	PREPARE PAYROLLS	REMIT PAYROLL DEDUCTIONS	PREPARE BUSINESS CHEQUES
OPERATE BUSINESS MACHINES	OPERATE CHEQUE WRITERS	OPERATE LAMINATING EQUIPMENT	OPERATE PHOTOSTATIC COPIERS	OPERATE COLLATING AND BINDING EQUIPMENT	SELECT AND INSTALL RIBBONS AND OR ELEMENTS AND MAINTAIN TYPEWRITERS	OPERATE ADDING MACHINES	OPERATE POSTAGE EQUIPMENT
TYPE AND TRANSCRIBE	TYPE FROM STRAIGHT COPY	CORRECT TYPEWRITTEN ERRORS	PREPARE CARBON COPIES	TYPE ON FORMS	TYPE ADDRESSES AND PREPARE ENVELOPES AND CONTENTS	TYPE FROM PROOFREAD COPY	TYPE VARIOUS STYLES OF LETTERS
ORGANIZE AND PREPARE WRITTEN COMMUNICATION	SPELL	PUNCTUATE	CONFIRM SPELLING, MEANING AND USAGE BY USING DICTIONARY AND OTHER SOURCES	USE THESAURUS TO SELECT SYNONYMS AND ANTONYMS FOR VARIETY	EDIT FOR SPELLING, PUNCTUATION ACCURACY OF FACTS AND FORMAT	EDIT FOR GRAMMATICAL STRUCTURE AND MEANING	COMPOSE TELEGRAMS
CO-ORDINATE RESEARCH AND DEVELOPMENT OF EXECUTIVE PRESENTATIONS	INVESTIGATE SOURCES AND SELECT & COLLECT APPROPRIATE MATERIALS	COLLECT AND SUMMARIZE INTERNAL STATISTICAL INFORMATION	DEVELOP AND MAINTAIN HAND-BOOK OF FREQUENTLY USED SOURCES	SCHEDULE AND ARRANGE FOR PREPARATION OF PRESENTATION	CO-ORDINATE, DEVELOP AND ASSEMBLE REPORTS FROM A NUMBER OF SOURCES	EVALUATE & SELECT APPROPRIATE MATERIALS AND FORMAT FOR PRESENTATION	PREPARE VISUAL AIDS FOR PRESENTATION

FIGURE 1 (Cont.)

HANDLE AWKWARD OR UNPLEASANT SITUATIONS	PLACE AND MAINTAIN RECORD OF LONG DISTANCE CALLS	INTERPRET AND FOLLOW INSTRUCTIONS	DEVELOP WORKING RELATIONSHIP WITH FELLOW EMPLOYEES	MAINTAIN POSITIVE CHEERFUL IMAGE WITH PUBLIC AND OTHER STAFF	MAINTAIN CONFIDENTIALITY OF DISCREET INFORMATION	IDENTIFY AND DEFINE ROLE AND RESPONSIBILITY IN WORK ENVIRONMENT	DEFINE AND DISCUSS PROBLEMS AND FRUSTRATIONS RELATED TO ROLE	SUGGEST SOLUTIONS REGARDING WORK AND ROLE	PARTICIPATE IN MEETINGS AND DISCUSSIONS	MAINTAIN BALANCE BETWEEN BUSINESS AND PERSONAL LIFE
ANALYZE TIME AND RESOURCES AND MAINTAIN APPOINTMENT SCHEDULES	ASSIST EXECUTIVE IN TERMINATING OVERTIME MEETINGS	ORGANIZE AND MAINTAIN VALUABLE CONTACTS FILE	SCAN NEWSPAPERS AND MAGAZINES FOR PERTINENT INFORMATION	PLAN ITINERARIES AND MAKE TRAVEL ARRANGEMENTS	IDENTIFY AREA OF RESPONSIBILITY AND TAKE ACTION	IDENTIFY AND PERFORM PERSONAL SERVICES TO EXECUTIVE	DEPOSIT PERSONAL INCOME	PREPARE CHEQUES, MAKE PAYMENTS AND MAKE ENTRIES	MAINTAIN EXECUTIVE PERSONAL EXPENSE FILE	COMPILE CURRICULUM VITAE
RECOGNIZE AND ACKNOWLEDGE ACHIEVEMENT	PREPARE REGULAR STAFF EVALUATION REPORTS	DETERMINE DEVELOPMENTAL NEEDS AND RECOMMEND PROGRAMS	RECOGNIZE PERSONALITY TYPES AND POTENTIAL CONFLICTS	DETECT SIGNS OF EMOTIONAL STRESS AND EXPLORE PROBLEMS AND SOLUTIONS	APPLY ENVIRONMENTAL CHANGES TO IMPROVE INDIVIDUAL OR GROUP PERFORMANCE	TERMINATE OR RECOMMEND TERMINATION OF EMPLOYMENT				
ANALYZE WORK AND TRAFFIC FLOW AND ORGANIZE PHYSICAL LAYOUT	ORGANIZE, MAINTAIN AND CONTROL EXECUTIVE OR PROFESSIONAL REFERENCE LIBRARY	ORIENT REPLACEMENTS	ASSIST IN PREPARING ESTIMATES AND BUDGETS FOR OFFICE OPERATION							
FILE	INTERPRET FILE CATEGORY AND NOTE REFERENCE ON CORRESPONDENCE	OPEN NEW FILES AND PREPARE INDEX CARDS	DETERMINE INDEX UNIT FOR FILE TITLES	CONTROL FILES	CROSS REFERENCE AND COPY MATERIAL FOR RELATED FILES	DETERMINE FILING EQUIPMENT REQUIRED	REVIEW AND CLEAR FILES AND DESTROY OR STORE INACTIVE FILES	MAINTAIN SECURITY OF FILES	PRESCRIBE FILE SYSTEM	
RECONCILE BANK STATEMENTS	MAINTAIN ACCOUNTS RECEIVABLE	PREPARE BILLINGS	PREPARE OVERDUE ACCOUNTS FOR COLLECTION AGENCY	MAINTAIN ACCOUNTS PAYABLE	MAINTAIN EXPENSE ACCOUNTS AND TRAVEL ADVANCE RECORDS	PREPARE DATA FOR KEY PUNCH	CALCULATE INTEREST CHARGES AND DISCOUNTS	EVALUATE AND SELECT METHODS AND ARRANGE TRANSFER OF FUNDS	PREPARE PERSONAL INCOME TAX FORMS	MAINTAIN GENERAL LEDGER AND PREPARE TRIAL BALANCE
OPERATE P.A. SYSTEMS	OPERATE TELEPHONE INTERCOM SYSTEMS	OPERATE SWITCHBOARD	OPERATE CALCULATORS	OPERATE AND MAINTAIN SPIRIT DUPLICATORS	OPERATE AND MAINTAIN INK DUPLICATORS	OPERATE ELECTRONIC OR INFRA RED STENCIL CUTTERS	PREPARE ADDRESSES FOR PLATES AND OPERATE ADDRESSOGRAPH EQUIPMENT	OPERATE AND MAINTAIN TRANSCRIBING EQUIPMENT	OPERATE TELEX	SET UP AND MONITOR RECORDING EQUIPMENT FOR CONFERENCES
TYPE SPEECHES AND RELEASES	TYPE MINUTES	TYPE MANUSCRIPTS	TYPE TABULAR PRESENTATIONS	TYPE OR PREPARE MASTER FOR SPIRIT DUPLICATORS	PREPARE TYPEWRITER AND TYPE INK STENCILS	TYPE FINANCIAL STATEMENTS	TYPE LEGAL DOCUMENTS	TYPE FORM MASTERS	TYPE FROM RECORDED DICTATION	TYPE FROM DIRECT DICTATION
COMPOSE TELEX MESSAGES	COMPOSE REQUEST LETTERS	COMPOSE ACKNOWLEDGEMENTS	COMPOSE CONFIRMATIONS OF MEETINGS AND OTHER COMMITMENTS	COMPOSE AND REPLY TO INVITATIONS	COMPOSE NEWSPAPER ADS	COMPOSE MEMOS, INTERNAL DIRECTIVES AND PROCEDURES	COMPOSE BUSINESS LETTERS	COMPOSE PERSONAL LETTERS		
PRESENT AUDIO AIDS FOR PRESENTATION										

FIGURE 1 (Cont.)

KEEP ABREAST OF NEW AND RECOMMEND OR IMPLEMENT NEW TECHNIQUES	COMMUNICATE PROCEDURES TO EFFECT STAFF REPLACEMENTS	ORIENT SELF TO WORK ENVIRONMENT

SUMMARIZE INCOME AND EXPENDITURES

OPERATE AUTOMATIC TYPING EQUIPMENT

TYPE MATHEMATICAL OR SYMBOLIC TECHNICAL MATERIALS	TAKE NOTES IN SHORTHAND AND TRANSCRIBE	TAKE AND TRANSCRIBE MINUTES OF MEETINGS	TAKE DICTATION AND TYPE FROM SHORTHAND NOTES

DEVELOPED BY
HOLLAND COLLEGE
IN COOPERATION WITH
BUSINESS AND INDUSTRY

CHARLOTTETOWN, P.E.I.

SKILL							
OBJECTIVE							
LEARNING ACTIVITIES							
LEARNING ENVIRONMENT							
EQUIPMENT							
INSTALLATION OF EQUIPMENT							
HUMAN RESOURCES							
SELECT PRINTED MATERIAL							
DEVELOP PRINTED MATERIAL							
SELECT A/V MATERIAL							
DEVELOP A/V MATERIAL							
LABS							
LEARNING EQUIPMENT							

PROGRAM DEVELOPMENT GRID

Figure 2

The first row on the program development grid is where the objectives for each skill are recorded. It has been learned by experience that writing objectives for each skill has enabled the instructor and trainee to have a more precise picture of what the skill involves.

After the objectivs have been written, the next step is to define learning activities. This is the process of assessing each identified skill on the DACUM chart and visualizing appropriate work-oriented activities through which the individual can gain experience and through which his achievements can be evaluated.

In most cases it is relatively easy to replicate industrial experiences in the learning environment for most skills identified in the occupational analysis.

The next stage of development is the specification of the appropriate learning environment for each skill. It is important that this be done on the basis of individual examination of each skill and it's related learning activities. Selection of the learning environment for each skill is normally a matter of deciding between the job environment and the simulated environment of the institution.

Locating and assigning human resources is the key area for a successful program. One must be sure that all skills on the chart are adequately covered by available human resources. This involves assignment of instructors to skills and arrangements to bring in resource persons to handle any skills that cannot be handled by the instructional team. The advisory committee from industry frequently assists in the identification of resource people from the community.

The next part of program development is the preparation of learning packages for each skill. Selecting printed material is the first step normally taken and the reasons are obvious. First, there is a wealth of printed materials available for most occupations. Second, printed materials are much less expensive than other media. Third, printed materials have traditionally been a primary source of information.

Developing printed materials may be required as available material is often geared to a higher or lower level of sophistication than is required in a particular program.

Use of audiovisual material is most desirable. Not only do they provide alternate media and modes of presentation but they permit learners to observe and model desired performance. While they could rely on the instructor to model this performance for them, the individualization of the program will place excessive demands on instructor time if such resources are not available.

When there is a lack of suitable commercially made audiovisual materials it will become necessary for the instructors to develop suitable material. Certain occupations involve a good deal of which might be termed techniques

in which the physical performance or movement of the skilled performer is critical. It is essential that there be provisions for capturing technique in the form of formal demonstrations or provision for observation of skilled persons performing the tasks. Video tape is a most useful device for quickly recording action or performance to provide an opportunity for learners to model such a performance.

Normally a variety of audiovisual materials is usually the best solution to serving the needs of learners. Figure 3 shows a development model for the DACUM learning program.

Implementation of Program

When the learning resource center has been established and the program developed, the next phase is the implementation of this method of training. We have to look at the implementation from several classifications:

1. The new trainee
2. Apprenticship trainee
3. Employee retraining or upgrading

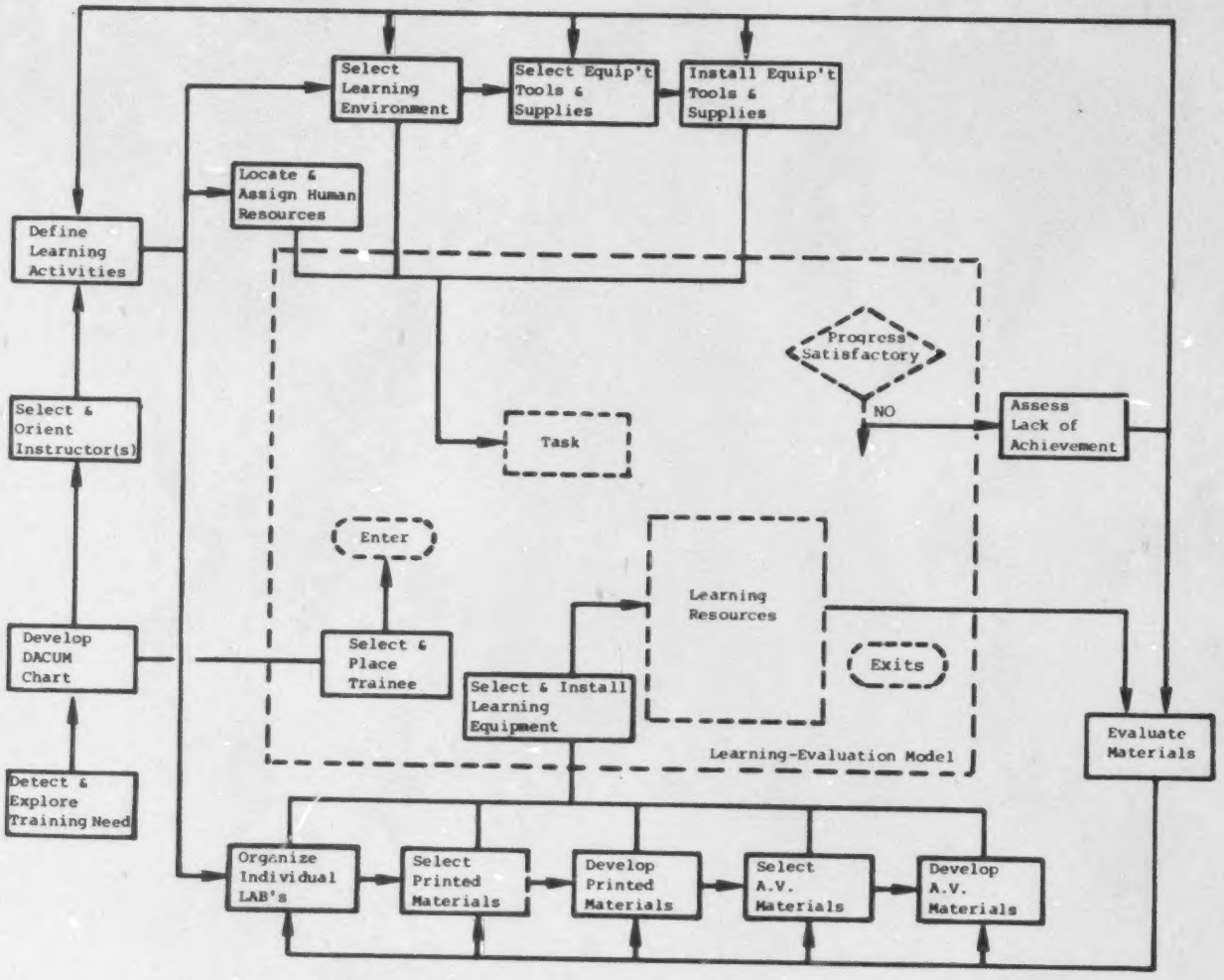
We will start with new trainees as the method of training will be similar for the other categories. The occupation under discussion will be the field of electronics technology.

It is quite likely that a well planned orientation program will have to be undertaken by the learner. In most cases this will be his first encounter with an individualized type of training where he will be required to

1. Accept responsibility for his education
2. Make a self-evaluation before being confirmed by the instructor
3. Prepare his own work schedule
4. Work with a rating method based on performance

Part of the orientation program will involve the learner for the first time with his chart. The chart should be regarded as the most important document in the program and if used properly will be the basis of plotting the learner's progress and determining when the learner has a sufficient number of skills to enter the workforce.

The first task the learner must perform is to analyze his chart and identify any skills in which he has gained competence from previous experience. To do this he must use the performance rating scale that is found on the far right of the chart (Figure 1). This is what is known as an



DEVELOPMENT MODEL FOR DACUM LEARNING PROGRAM

Figure 3

entry rating and for every skill rated the instructor must confirm the rating by being assured that the learner can perform to the level indicated. These ratings are quite often adjusted once the learner is aware to the objectives for each skill and what industry expects.

Once the entry ratings are confirmed the student starts to work towards his specific occupational objective. The learner may need encouragement to make the initial selection of learning tasks. However, a choice must be made even if the decision is changed at a later date. A wide range of real projects should be available so that the learner can get started. Projects usually involve a number of skills found on the chart which may result in a rating for several tasks. Each skill that the learner performs is rated and as the learner continues to work on projects he will develop a skill profile required by industry. Figure 4 is a diagram showing how a learner goes through the program, and for every project or learning activity the learner is cycled through this process.

When the learner develops a skill profile suitable to the electronics industry he then goes into the workforce. As he comes in contact with new skills he is encouraged to have his employer rate him on his chart. Thus the learner continues to develop his profile. If the learner happened to be in an apprenticable trade, as he develops new skills he would be rated on his chart and would continue to further develop his skill profile. The advantage would be when the learner reenters the training center he can work on skills that he has had no experience with and also upgrade previous ones. Thus his training is always meaningful and the individual develops to his maximum potential. The chart is extremely important as it can be the criteria on which a licensing body issues a license.

The last area concerns the individual that is already in industry and requires retraining. With this type of document the employer in consultation with the employees can establish a skill profile of each worker he should be encouraged to keep building on that profile. As the technology and techniques of the particular industry change, one should analyze what skills are required to remain competent. Thus having a record of the employee's skill profile, when retraining is required a program can be identified and the employee need only develop the new skills required.

The most important feature here is the efficiency of the training program which should be a maximum due to the fact that employees are being retrained almost on a prescription basis and with no requirements on a large block of time. The time will be determined by the individual on a basis of how many new skills are required or how many need to be upgraded. It is also quite possible that the employer will release an employee for a few hours a day and with this type of program it would not interrupt or disturb anyone in the learning resource center.

Conclusion

In conclusion, the success of a program is directly proportional to the planning of the program. It has been the intention of this paper to

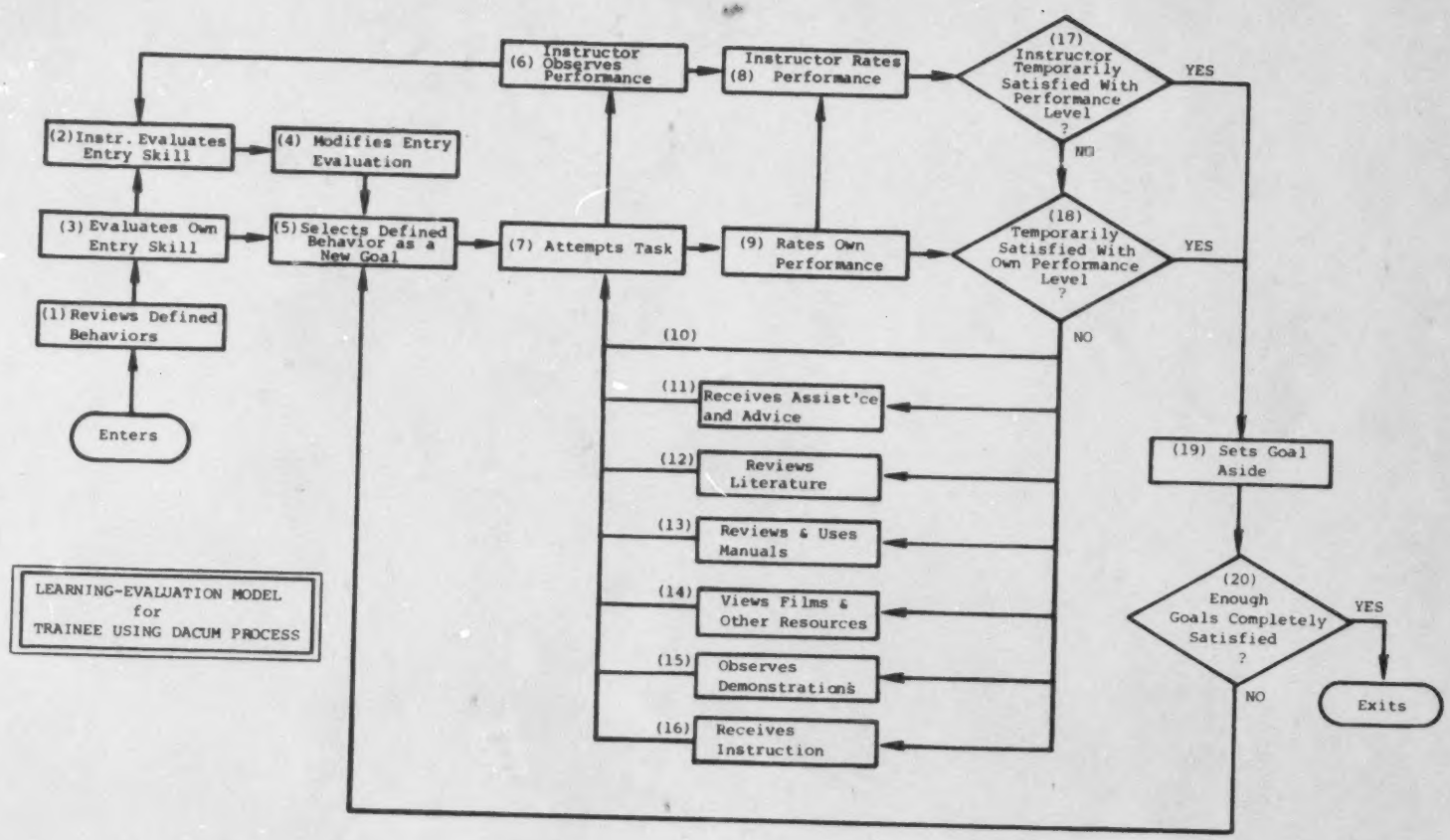

(6) Instructor Observes Performance
Instructor Rates (8) Performance
(17) Instructor Temporarily Satisfied With Performance Level ?
YES
NO
(2) Instr. Evaluates Entry Skill
(4) Modifies Entry Evaluation
(3) Evaluates Own Entry Skill
(5) Selects Defined Behavior as a New Goal
(7) Attempts Task
(9) Rates Own Performance
(18) Temporarily Satisfied With Own Performance Level ?
YES
NO
(1) Reviews Defined Behaviors
Enters
(10)
(11) Receives Assist'ce and Advice
(12) Reviews Literature
(13) Reviews & Uses Manuals
(14) Views Films & Other Resources
(15) Observes Demonstrations
(16) Receives Instruction
(19) Sets Goal Aside
(20) Enough Goals Completely Satisfied ?
YES
NO
Exits
LEARNING-EVALUATION MODEL for TRAINEE USING DACUM PROCESS

Figure 4

briefly outline an approach to education which involves business and industry in the planning and development of program. In so doing, industry and individuals will be able to take maximum advantage of our educational institutes.

Schools can be open year round and many more people can be enrolled on a part-time basis using the facilities for a few hours per day. Learning resource centers can be established and people from industry along with educators can act as a resource people.

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Performance-Based Curricula for Professional Development

by Glen E. Fardig*

The Center's materials for performance-based teacher education are based on the 384 important teaching competencies for vocational teachers identified in the series of Cotrell studies. A teaching competency is defined as an observable teacher behavior requiring skill in the performance, and performed to enhance pupil learning. These represent the lifetime professional skills of the expert teacher, and do not include technical occupational skills.

The instructional materials now in the final field-test stage of development are in the form of 100 individualized learning packages, called modules. These modules encompass all 384 competencies, and are organized into ten broad categories: program planning, instructional planning, instructional execution, instructional evaluation, instructional management, guidance, school-community relations, student organization, professional development, and coordination.

In addition to the generally accepted characteristics of performance-based materials, The Center's modules have the following features.

1. Each module focuses on one or more verified teacher competencies.
2. Modular design provides flexibility for program construction.
3. Learning experiences allow for individual or group instruction.
4. All modules are suitable for preservice or in-service education.
5. Most modules are self-contained.
6. Optional resources include printed and multi-media materials.
7. The design permits use of situation-specific materials.
8. Each module culminates with evaluation of the specified teacher competency in an actual school situation.

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A typical instructional sequence begins with the statement of objective(s), presents the required cognitive knowledge for the competency, provides planning activities, provides for practice or simulated activities, and ends with the demonstrated competence in an actual school situation. Optional learning activities are provided for enrichment and for students with special interests. Alternate activities are provided for activities requiring peers. Student feedback is provided at key points in the learning process. Demonstrated competence is held as the constant, while time for completion is the variable.

The PBTE curricula is viewed as a total delivery system, to be selected, organized, and managed in a unique pattern for each implementing institution. The handbook for module development can assist the institution in development of augmenting instructional modules. The student guide orients students to the PBTE approach. The resource person guide assists the resource person in the performance of this crucial task. The implementation guide presents guidelines for the program administrator in the process of installing a PBTE program. Local schools provide the setting needed for the critical final performance of the competencies.

Each teacher education institution is expected to develop its own design for the implementation of PBTE, taking into account its own goals, its students, the educational environment, and the support available. For preservice vocational teacher programs, 20 or 30 modules may be selected as a required core, and another 10 used as electives. In-service programs may identify a small group of modules essential to the teacher direct from the occupation, while experienced teachers will build modularized programs based on their own perceived professional and personal needs.

Presently the revised modules are undergoing final testing at 17 institutional sites across the country. Arrangements for publication and dissemination are now being made, and availability dates being established Prices for the consumable modules are expected to be competitive with traditional materials.

section six:

Reports of Special Interest Groups: Strategies and Techniques for Providing Better Industry-Education Cooperation

SPECIAL INTEREST GROUP REPORTS

Interaction among participants sharing common professional responsibilities was viewed as a valuable technique for facilitating the achievement of the seminar's objectives. Seminar participants, therefore, divided themselves according to service area or function. The following seven special interest groups were established:

- Instructors in Trade and Industrial Education Programs
- Instructors in Home Economics Education Programs
- Instructors in Business and Office Education Programs
- Instructors in Agricultural Education Programs
- Instructors in Distributive Education Programs
- Instructors in Health Occupations Education Program
- Administrators and Supervisors of Personnel Development Programs

Each group was charged with identifying and discussing strategies and techniques for providing better industry-education cooperation. The most salient outcomes from each of the special interest groups follow. These reports attempt to share some of the dialogue that occurred during two afternoon sessions.

Trade and Industrial Education

Leader: Irvin Lathrop*
Recorder: Leonard Torres**

Vocational education has been called education with a purpose and was developed in response to the social and economic needs of our society. Today, as it has been for nearly 60 years, vocational education is concerned with people and work. While the purpose of vocational education remains the same, changes in economic and social structures of our nation have resulted in changes in the occupational requirements of the labor force, vocational goals of the people and the kind of people to be trained. The need for industry/education cooperation has never been greater. Yet there are few problems in the field of vocational education that are as complex as that of developing, organizing, and implementing effective programs in which labor, industry and education fully cooperate.

Some of today's unemployment can be blamed on poor connections between schooling and jobs. To prepare individuals to move from the world of schooling to the world of work, vocational educators should be collaborating with labor and industry to bring the two worlds closer together.

The charge of the discussion group for trade and industrial education was to generate potential methods for increasing involvement of business and industry in preservice and in-service personnel development programs. The seminar group of 34 individuals met to identify areas in which labor, industry and education could collaborate in the design and implementation of preservice as well as in-service personnel development programs. Most of the participants concurred that the discussion should focus upon:

1. Guidance functions
2. Curriculum

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*Irvin Lathrop, Chairman, Department of Industrial Education, California State University, Long Beach, California.

**Leonard Torres, Professor of Industrial Education, California State University, Long Beach, California.

3. Facilities

4. Financial resources

To develop strategies for labor, industry, education, cooperation in personnel development, the seminar group was divided into four subgroups. Each of the subgroups focused their attention on the four areas and made suggestions for implementing a cooperative effort.

The strategies developed by the subgroups and agreed upon by the entire seminar group consist of the following:

Guidance Functions

Counselors are the link through which young people learn about work. Therefore we should have:

1. occupational counselors from industry to work with school counselors

2. industry/education exchange programs for all educators

3. an establishment of video taped occupational information

4. a program where industry provides educators with an opportunity to go through all the procedures of applying for an entry level job.

Curriculum

1. Business management procedures could be applied to curriculum development.

2. Industrial personnel work with teachers in developing specific courses of instruction.

3. Utilize advisory councils to their fullest extent in the development of curriculum.

4. Arrange for industrial personnel to provide technical in-service workshops.

Facilities

1. Arrange for short term on-the-job training in industry.

2. Utilize industrial personnel for advice pertaining to purchasing of equipment and supplies.

3. Direct contributions of equipment, supplies, and shop areas for instruction.

4. Provide off-campus centers for occupational training.

Financial Resources

1. Industrial support for career fairs.

2. Scholarships and grants for increasing technical competencies of recipients.

Advisory Committees. It was obvious to the group that in the short period of time allotted to the discussion of industry/education cooperation, the topic could not be exhausted. However, it was the consensus of the entire group that the key to better industry-labor-education cooperation and personnel development was the wise and judicious use of advisory committees.

Home Economics Education

Leader: Elaine Jorgenson*

Fifteen participants spent two afternoons discussing the techniques, needs, and concerns listed below.

I. Current techniques being used for better cooperation between industry and home economics education:

- Field trips to various industries
- Resource persons from various businesses and industries
- Slide presentations prior to field trips
- Utilization of equipment and facilities from nearby institutions for occupational foods and clothing courses
- Advisory councils that include persons from business and industry
- Graduate course consisting of seminars and actual work experience

II. Needs and concerns identified relating to occupational home economics education:

- Occupational training in occupational home economics for adults
- Certification requirements for occupational home economics
- Hands-on experiences in industry for prospective teachers of occupational home economics
- Occupational home economics programs for students with special needs

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*Elaine Jorgenson, Head, Home Economics Education, Oklahoma State University, Stillwater, Oklahoma.

Business and Office Education

Leader: Neva P. Maddox*
Recorder: Otto Santos**

Objectives Discussed

What are the participants doing or suggesting that we do to generate more involvement of business and industry in preservice and in-service personnel development programs? Also, how can we generate more communication between business and education?

Suggestions

Require students to participate in an on-site industrial experience: for example, a two-week module. This might necessitate the hiring of a supervisor to direct an internship program at the college level.

Develop a practicum at the Masters level as a culminating experience. The students would find their own jobs in this case. The teacher would coordinate the program through a seminar concept.

Generate required hours of teacher oriented work experience as a requirement for graduation and/or certification. The hours suggested range from 2000 to 8000 working hours. Concerns expressed were: Do we live the job or get a shadow experience? Do teachers need to be physically present to get data on what the job is? Do we suggest a broad experience with a management oriented work experience requirement?

Work experience needs to be management oriented rather than employee oriented. This will allow teachers to cope with a management orientation to the world of work. This is essential for teachers in block programs.

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*Neva Maddox, Head, Office Administration and Business Education, Southwest Missouri State University, Springfield, Missouri.

**Otto Santos, Assistant Professor of Vocational and Technical Education, The Ohio State University, Columbus, Ohio.

Teachers and teacher educators should join ASTD and other professional business organizations in order to keep abreast of business techniques and procedures as well as innovations. This is a good avenue of professional growth.

Have a career day in which students are brought to industry as part of an awareness program.

Use an advisory committee as a vehicle to bridge the communications gap between business and education. There was much discussion on this topic. Points discussed were political structure, goals, techniques, businessman's involvement, ideal situations, criteria, and continuity of committee personnel.

Use the concept of a weekend college in which businessmen are joined together with education to discuss communication problems.

On the second meeting date, Mr. Pat White discussed the Kentucky Appalachian Staff Exchange project. This is a new program in which 83 teachers were placed in 110 business settings.

Each vocational teacher educator reported on his internship program for teachers. After much discussion, the following questions were raised:

1. Is an internship in industry actually beneficial to a teacher?

2. What are the specific objectives for on-the-job training and/or internship programs?

    a. What competencies are the interns able to demonstrate that were not demonstrable prior to the internship?
    b. Is typing for eight hours a day or working at any repetitive task a valuable learning situation?
    c. Should the internship be more management oriented?

3. What are the guidelines for receiving college credit?

    a. Should students receive pay?
    b. Should the school pay a business for allowing a student to work?
    c. Should students perform other academic work in order to receive credit? How much?

4. How can we get more people in business to cooperate in internship programs?

    a. Can educators talk the "language of business"?
    b. Can educators afford the cost of belonging to many professional business organizations without being on an expense account?

We did not solve any of our problems, but we did raise several questions that we would like to have answered in the future. As Mr. Lattanzio from Connecticut stated, "It is amazing and comforting to find out that educators from all over the United States are having the same problems that you have."

Agricultural Education

Leader: Earl H. Knebel*
Recorder: Richard Douglass**

The special interest group in agricultural education met in seminar sessions on Wednesday, October 29, and Thursday, October 30, 1975 focusing upon the seminar objective "to determine strategies and techniques for providing better industry-education cooperation." All participants were actively involved in contributing ideas, sharing experiences, and shaping a few general statements of recommendation. The following summary is presented by presenting a concensus statement followed with a related complementary recommendation.

1. Traditionally, students in vocational agriculture have been taught the art of entrepreneurship as owners and managers of agricultural enterprises. As such, students are involved directly with agricultural business and agri-industry. Teachers of vocational agriculture should become competent in the areas of economics, management, and production in order to teach and advise students.

2. Students should be able to perform the necessary competencies to survive in jobs for which they are trained as they enter jobs in business and industry. Teachers responsible for instructing agriculture students should work cooperatively with employers or prospective employers in planning and conducting instructional programs and work experiences. Program evaluation should be based upon industry evaluation of the performance of students completing specific training programs. This implies a systematic plan for placement and follow-up, and continuous evaluation.

3. Human relationship skills are extremely important for holding a job in any business or industry. Teachers should be trained to assist students and trainees in developing competencies and favorable attitudes in the areas of "working with and getting along with fellow workers and supervisors."

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*Earl H. Knebel, Professor and Head, Department of Agricultural Education, Texas A&M University, College Station, Texas.

**Richard Douglass, Instructor of Agricultural Education, University of Nebraska, Lincoln, Nebraska.

4. Advisory committees with representatives from business and industry should be involved by teacher educators and agriculture teachers in program planning, curriculum development, and program evaluation. Teachers of vocational agriculture and teacher educators should become experienced in communicating and working effectively with advisory committees.

5. The expertise and resources from business and industry should be involved in support functions in the instructional programs in vocational agriculture. Teachers should be trained to make effective use of such resources in enriching the instructional programs for which they are responsible.

6. The FFA as the national youth organization representing vocational agriculture can and should play a vital role in enhancing communications between business and industry and vocational education in agriculture. Teachers of vocational agriculture should be trained to make effective use of FFA officers and members in communicating with business and industry at the local, state, and national levels.

7. There is a recognized need for technically trained workers in agriculture. Community colleges and post-secondary institutions can best serve individuals needing training in many technical areas in agriculture. More emphasis and more resources need to be allocated for training technicians in agriculture.

8. Crises and emergency needs arise in manpower training programs in agriculture. Often, these needs arise with little lead-time awareness or with short range anticipation. An example is the current need for trained technicians in the field of pesticide application. Teachers of agriculture, particularly at the post-secondary level, seem to be logical coordinators and directors of such training programs. It is recommended that those responsible for administering and directing training programs in vocational education in agriculture continue to respond positively, as they have historically, in confronting past crises, and in implementing training programs to meet the unique and contemporary manpower needs of agriculture in the United States.

9. Vocational agriculture in the secondary schools and post-secondary agriculture programs have served the needs of special groups such as the socioeconomically disadvantaged and the handicapped. It is recommended that students and adults who are genuinely interested and committed to training programs for agricultural occupations from these special categories be served in order to prepare them for employment in agricultural occupations. Business and industry need to be involved in cooperatively planning and conducting such training programs.

10. The broad concept of career education seems to be universally acceptable to vocational educators in agriculture. Professional educators in vocational education in agriculture should aid in communicating the concept and philosophy of career education to business and industry.

Distributive Education

Leader: Steven Eggland*
Recorder: Richard Campbell**

It was agreed upon by the participants in the distributive education group that even though distributive education has an exemplary record in this regard, industry-education cooperation should continue to be a high priority. Several strategies and techniques for providing better industry-education cooperation were developed and reaffirmed by the discussion group. They were:

1. That teacher education should work with business to develop a preservice distributive occupational practicum for distributive teacher education. This could be done at the national, state or local level and would greatly increase the quality of distributive teacher education in the occupational preparation realm.

2. That distributive education enthusiastically cooperate with industry in their willingness to help assess the attitudes of distributive education students in regard to economic understanding.

3. That exchange programs be developed to get distributive education teachers back into distributive businesses on a full- or part-time basis in order to update their understanding of marketing and distribution.

4. That industry-education cooperation should be more fully utilized in the area of distribution in the first two phases of the accepted USOE career education model.

5. That a dialogue with distributive industry be nurtured dealing with the improvement of economic education.

6. That a creative of distributive teachers and industries be explored at the national, state or local levels that would foster communication between and among teachers and industries.

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*Steven Eggland, Associate Professor and Distributive Teacher Educator, University of Nebraska, Lincoln, Nebraska.

**Richard Campbell, Administrative Consultant for Cooperative Education, Nebraska State Department of Education, Lincoln, Nebraska.

Health Occupations Education

Leader: Norma Jean Schira*

Discussion

The discussion was opened with comments from the group about "Planning for Peak Production Periods." The following conclusions were the results of the discussion.

1. It is impossible to plan for "peak production" in hospitals and other health agencies.

2. All health agencies use many of the educational personnel, and other health occupations personnel, for summer relief and vacation periods.

3. All health agencies have some very specific needs for personnel, e.g., medical records personnel, electrical-electronic engineers for maintenance for new monitoring equipment.

The group then began a discussion on how the presentations of the general sessions applied to health occupations education. This discussion resulted in orienting some of the members to health occupations advisory committees, and the general concept of career education and career ladders. A general summary of the topics discussed and the conclusions reached follows.

I. EMPLOYEE EXCHANGE - Teachers on Actual Jobs

A. Health occupations education instructors are actually in the occupations work area through the clinical experience rotations of students.

B. There is a need for more involvement of the hospital/health agency staff and supervisors in the educational program to promote understanding of the health occupations programs.

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*Norma Jean Schira is an assistant professor and Coordinator of Health Occupations Teacher Education, Western Kentucky University, Bowling Green, Kentucky.

1. Closer cooperation of health occupations education staff and the hospital/health agency staff.

2. Involvement of the hospital/health agency staff in health occupations education program advisory committees and other coordinating committees.

3. Involvement of the hospital/health agency staff in the development of admission and selection criteria. How many classes would be full if all health occupations education programs took only students in the upper 1/10 of a class?

II. ISSUES AND PROBLEM AREAS FOR HEALTH OCCUPATIONS EDUCATION PROGRAMS

A. Open Door Policy of Community Colleges and Vocational Schools

1. Need personal interviews as admission criteria to help in evaluation of potential.

2. Need to develop methods of granting advanced standing for knowledge and skills learned previously.

3. The open entry-open exit trend creates some problems in health occupations education programs because of limited facilities which limit admissions.

4. Most health occupations education curricula are not set up for open entry-open exit.

B. Equipment

The equipment for health occupations education programs is expensive. Programs need to consider rental opportunities that may be available from equipment companies.

C. Cooperation Between Agencies

1. The educational agency may not have informed the hospital/health agency of the purposes and goals of the educational program.

2. There seems to be a lack of knowledge about the types of health occupations education programs available by both the hospital/health agency and the educational agency.

3. The educational institution may not be keeping their end of the bargain to prepare health occupations workers for the health field.

D. Federal Legislation

1. Federal legislation is encouraging health occupations programs for the disadvantaged and handicapped.

a. This creates problems in health occupations education especially with educable and trainable retarded as the types of jobs in which they can function is very limited.

b. May defeat the purpose of career ladders in health because many of these people will not be able to progress to higher level positions.

E. Professional Organizations

1. The technical programs, or any program, which leads to a credential of some type is controlled by professional organizations.

2. This control by professional organizations does not encourage career mobility within the health field.

3. Health occupations education program development requires close cooperation and relationships with these organizations.

F. Small Rural Agency Versus the Medical Center and Large Agency

1. There is a need for some type of communication system such as a telephone system to connect the small agency with the larger agency for consultation and other types of help.

2. Small agencies need workers who are "generalists" and can be taught to function in many areas, not the "specialists" who function in a specific area.

3. Localism in health occupations education programs has not created a problem by "flooding the market" with workers.

III. HEATLH CARE AND SERVICE FIELD

A. Current Picture

1. The general field of health is expanding faster than the public and health professionals are aware of and are willing to accept.

2. The development of health maintenance organizations and group practices involve many new areas and opportunities in health care and service.

3. Many new careers are opening up in health such as the medical computer programmer and the biomedical technician. Who will prepare these people? Where will they be used?

B. Career Education

1. Career education in the secondary schools has made more students aware of opportunities in the world of work, but career education in health has been limited.

   a. Need to identify more options in health.

   b. Need to inform counselors of the opportunities in the health field for more effective counseling in both career and vocational education.

   c. Need to be more aware of the non-hospital health career opportunities.

   d. Need to broaden the background knowledge of health careers and health occupations teachers at the entry level and to have them become more aware of the various opportunities in health that are both hospital and non-hospital related.

Administrators and Supervisors of Personnel Development Programs

Leader: Jerry Moss, Jr.*

Forty-eight people spent about three hours in fairly intensive discussion which focused on the following kinds of questions: What kinds of cooperative activities between business/industry and education might be of particular benefit to personnel development programs in vocational education? What kinds of activities might be particularly helpful to business/industry? What are some of the difficulties in implementing these activities?

Space limitations does not permit complete reporting of the many and varied ideas produced by the discussants. It is hoped that the following very brief summary is reasonably representative.

A. Some Cooperative Activities Particularly Useful to Personnel Development Programs in Vocational Education

1. Exchange teachers (e.g., using industrial trainers in teacher education programs and vice versa)

2. Utilize work stations in business/industry (for work experience) as a creditable portion of the preparatory and in-service programs of vocational teachers.

3. Arrange for business/industry tours as a means of familiarizing non-vocational teachers with work environments and of helping vocational students explore occupations.

4. Regularize and improve the selection of part-time instructors for adult vocational programs (e.g., make it a training experience for carefully selected industry/business personnel).

5. Use supervised industrial training experiences as an alternate for the typical student teaching clinical experience in public schools.

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*Jerome Moss, Jr., Chairperson, Vocational and Technical Education, University of Minnesota, Minneapolis, Minnesota.

6. Cultivate the industrial training market for potential placement opportunities for graduates from vocational teacher education programs.

7. Use the technical expertise of business/industry employees and their familiarity with management/labor relationships more frequently as instructional resources in teacher education programs.

8. Use the facilities of business/industry for conducting aspects of teacher education programs.

9. Include business/industry representatives from training departments on general and curriculum development advisory committees.

B. Some Cooperative Activities Particularly Useful to Business/Industry

1. Develop courses and programs of study to help prepare and/or update industrial trainers.

2. Conduct classes for supervisory, and other management personnel in business/industry in areas of our special (educational) expertise.

3. Assist organizations (labor and management) in the systematic improvement of instructors or apprentices.

4. Help employer-sponsors work more effectively with students in cooperative education programs (e.g., teach them how to create and use training plans).

5. Utilize employer feedback on employee performance in designing vocational teacher education programs.

6. Plan and conduct programs of research in such areas as job restructuring, quality of working life, artificial barriers to efficient manpower utilization.

7. Assist in the development of curriculums for use by industrial trainers.

8. Act as liaison between business/industry and other educators so that business/industry (and labor) views on general curriculum issues might be heard.

C. Some Problems of Implementation

1. Conceptualizing and creating the mechanisms for implementing cooperative activities.

2. Accumulating the necessary resources for both planning and implementation (time, competency, money) and adjusting to the use of new funding sources.

3. Coping with the differences in the educational philosophies of industrial trainers and vocational educators.

appendices

Appendix A

Seminar Program

PROGRAM

1975 National Vocational Education
Personnel Development Seminar

"Industry-Education Innovations
in Personnel Development"

Omaha Hilton Hotel
Omaha, Nebraska

October 28-31, 1975

TUESDAY		OCTOBER 28, 1975
7:00-9:00 p.m.	Registration	Grand Ballroom Foyer
8:00-9:00 p.m.	Social Hour (Cash Bar)	Grand Ballroom Center
WEDNESDAY	FIRST GENERAL SESSION	OCTOBER 29, 1975
8:30 a.m.		Grand Ballroom West

PRESIDER

Hazel Crain, Coordinator
Vocational-Technical Education
University of Nebraska

WELCOME TO CORNHUSKER STATE

Dan Fahrlander
Coordinator of Vocational Education
Omaha Public Schools
Omaha, Nebraska

Glen Strain
Assistant Commissioner for
Vocational Education, Nebraska

GREETINGS FROM THE CENTER

Robert E. Taylor, Director
The Center for Vocational Education

SEMINAR EVALUATION

Kay Adams, Mark Newton
Graduate Research Associates
The Center for Vocational Education

9:00 a.m. KEYNOTE ADDRESS

Industry and Education Stand Together
John W. Thiele, Director of
Industrial and Community Relations
Whirlpool Corporation

10:00 a.m. Coffee Break Grand Ballroom Foyer

10:30 a.m. OVERVIEW OF PERSONNEL DEVELOPMENT IN BUSINESS AND INDUSTRY

Charles C. Drawbaugh, Professor
Department of Vocational-Technical
Education, Rutgers University

11:30 a.m. Lunch (Individually Arranged)

SECOND GENERAL SESSION

1:00 p.m. PRESIDER Grand Ballroom West

Carl Blank, Administrator
Vocational Education Personnel
Development, Nebraska

LABOR LOOKS AT VOCATIONAL EDUCATION

Ken Edwards, Director of Skill
Improvement Training, International
Brotherhood of Electrical Workers

2:00 a.m. USING CASE STUDIES AS AN INSTRUCTIONAL DEVICE

James L. Donovan, Director of
Sales Training, Bank Building
Corporation

3:00 p.m. Coffee Break Grand Ballroom Foyer

3:00 p.m. SEMINAR SPECIAL INTEREST GROUPS

Instructors in Personnel Development Programs

Trade and Industrial Education Irvin Lathrop	Grand Ballroom Center
Home Economics Education Elaine Jorgenson	Suite 1032
Business and Office Education Neva Maddox	Grand Ballroom West
Agricultural Education Earl Knebel	Suite 932
Distributive Education Steve Eggland	Wyoming Room
Health Occupations Norma Schira	Conference Room

3:30 p.m. Administrators and Supervisors of Personnel Development Programs — Grand Ballroom West

Jerome Moss

(Various other special interest groups attending the seminar who feel they have a sufficient number of persons who are interested in meeting as a group may contact the seminar director for a special room assignment.)

5:00 p.m. Adjourn

EVENING PROGRAM (Simultaneous Sessions)

8:00 p.m. CENTER SHOWCASE

Metric Education for Vocational, Technical, and Adult Education — Winnebago Room

Wayne Schroeder, Assistant Director, Information and Field Services Division, The Center for Vocational Education

A Program to Prepare Entrepreneurs — Nebraska Room

Chris Kalangi, Project Director
The Center for Vocational Education

Cooperative Adult Education — Iowa Room

Bernie Moore, Project Director
James Granger, Program Assistant
The Center for Vocational Education

Performance Based Curricula for Professional Development — Missouri Room

Glen Fardig, Research Specialist
The Center for Vocational Education

WINDOW ON RESEARCH

Involving Business and Industry in Curriculum Design — Lewis Room

Lawrence Coffin, Program Director
Program and Staff Development
Holland College

Competency based Education for Post-Secondary Teachers — Clark Room

Leo Schreiner, Program Director
Occupational Education Personnel Development, Texas Education Agency

National Occupational Competency Testing — Capital Room

Harold Garbett, Assistant Director
NOCTI, Idaho State University

THURSDAY — THIRD GENERAL SESSION — OCTOBER 30, 1975

8:30 a.m. PRESIDER — Grand Ballroom West

Howard M. Fortney
EPDA Project Coordinator
Alabama State Department of Education

INTEGRATING AFFIRMATIVE ACTION EFFORTS AND ISSUES INTO THE PROFESSIONAL DEVELOPMENT PROGRAM

Althea Simmons, National Director for Education, NAACP

9:30 a.m. Coffee Break Grand Ballroom Foyer

10:00 a.m. PROGRAMS OF INDUSTRY-EDUCATION COOPERATION

Moderator

Robert Craig, Director of
Communications, American Society
for Training and Development

AN INDUSTRY-EDUCATION-LABOR COUNCIL THAT WORKS

Paul Musgrove, Executive Director
Tri-County Industry-Education-Labor
Council, Illinois Central College

Ronald D. McCage, Director
Research and Development, Division
of Vocational and Technical Education
Illinois Office of Education

AN ANALYSIS OF THE COMMUNICATION PROCESS IN INDUSTRY-EDUCATION-LABOR COOPERATIVE PROGRAM DEVELOPMENT

Claude P. Duet, Assistant Professor
of Education, University of New Orleans

EFFECTIVE TEAMWORK IN INDUSTRY-EDUCATION COOPERATION

Wayne C. Boeker, Supervisor, Special
Needs Assessment Supervisor, CETA
Bismark, North Dakota

James B. Hancock, Labor/Employee
Relations, Manager, Federal Electrical
Corporation, Langdon, North Dakota

LaDonna Elhardt, Department of Home
Economics, Magic City Campus, Minot,
North Dakota

Lyle Sorum, Assistant Superintendent
Fargo Public Schools

12 noon Lunch (Individually Arranged)

1:00 p.m.	SEMINAR SPECIAL INTEREST GROUPS	
	Trade and Industrial Education	Winnebago Room*
	Home Economics Education	Lewis Room*
	Business and Office Education	Grand Ballroom West
	Agricultural Education	Kansas Room*
	Distributive Education	Wyoming Room
	Health Occupations	Conference Room
	Administrators and Supervisors of Personnel Development Programs	Grand Ballroom East
3:00 p.m.	Coffee Break	Grand Ballroom Foyer

FOURTH GENERAL SESSION

3:30 p.m. PRESIDER — Grand Ballroom West

Rodney Chambers, Assistant
Professor, Vocational and
Industrial Education
Virginia Polytechnic Institute

EVALUATION OF INSTRUCTIONAL SYSTEMS

William F. H. Ring, Principal Engineer
Calspan Corporation, Buffalo, New York

4:30 p.m. Adjournment

6:00 p.m. Hospitality Hour (Cash Bar) — Grand Ballroom Center

7:00 p.m. SEMINAR DINNER — Grand Ballroom East

Toastperson

Duane Nielsen, Chief, Vocational
Personnel Development, USOE

Presentation of CVE Distinguished
Service Award to Betty Simpson, Dean,
School of Family Sciences and Consumer
Services, University of Wisconsin

by

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*Please note change in meeting room

Robert E. Taylor, Director
The Center for Vocational Education

A Program for Improving the Quality
of Working Life

Nicholas Bizony, Associate Director
National Quality of Work Center

FRIDAY — FIFTH GENERAL SESSION — OCTOBER 31, 1975

9:00 a.m. PRESIDER — Grand Ballroom West

Dallas G. Ator, Associate Director
The Center for Vocational Education

COGNITIVE MAPPING OF STUDENTS

Derek Nunney, Vice President for
Academic Affairs, Oakland Community
College

10:30 a.m. Coffee Break — Grand Ballroom Foyer

11:00 a.m. COGNITIVE MAPPING OF STUDENTS

Derek Nunney
Discussion/Question & Answer
Period

12 noon SEMINAR LUNCHEON — Grand Ballroom West

Toastperson

Duane Nielsen, Chief Vocational
Personnel Development, USOE

Future Think: Training and Development . . .
Where Do We Go From Here?

Kevin O'Sullivan, Executive Director
American Society for Training and
Development

2:30 p.m. Special Tours to points of interest in the
Omaha area

--Mastercraft Furniture Corporation

--Metropolitan Technical Community College

--Boys Town

Appendix B

Seminar Participants

LIST OF PROGRAM PARTICIPANTS, PRESENTERS, AND PRESIDERS

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